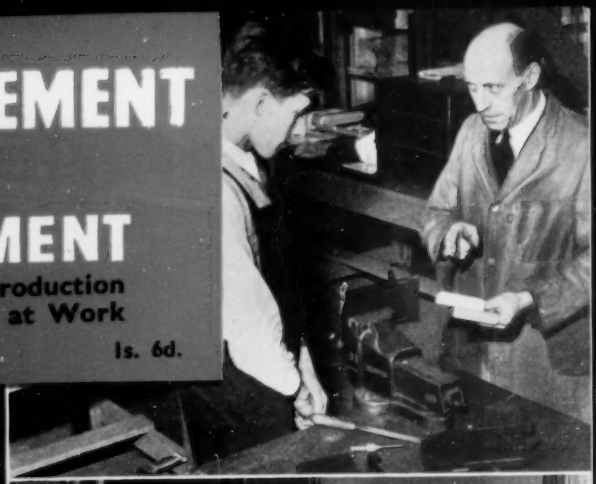
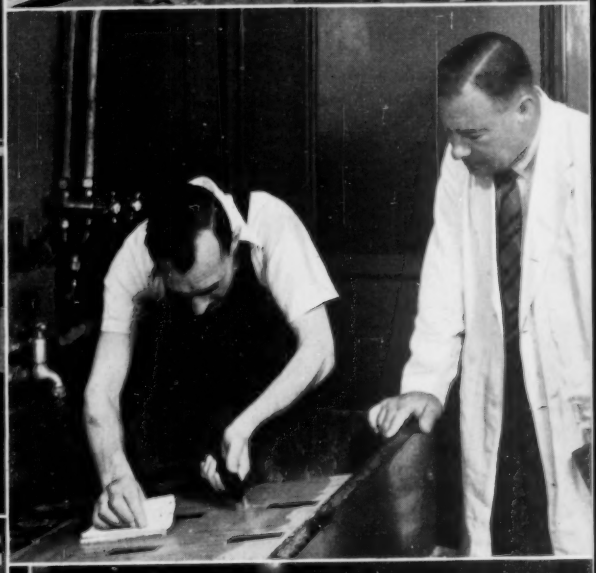
PERSONNEL MANAGEMENT
WELFARE & INDUSTRIAL EQUIPMENT

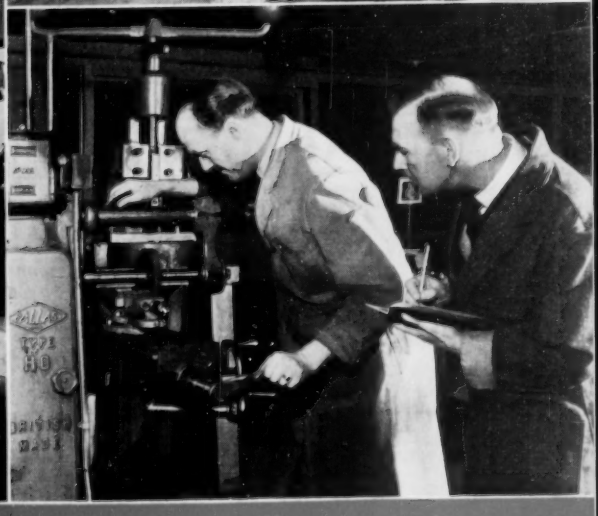
The Journal devoted to increasing Production through Better Management of People at Work

NOVEMBER, 1954

1s. 6d.







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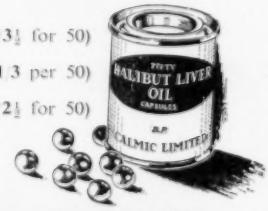

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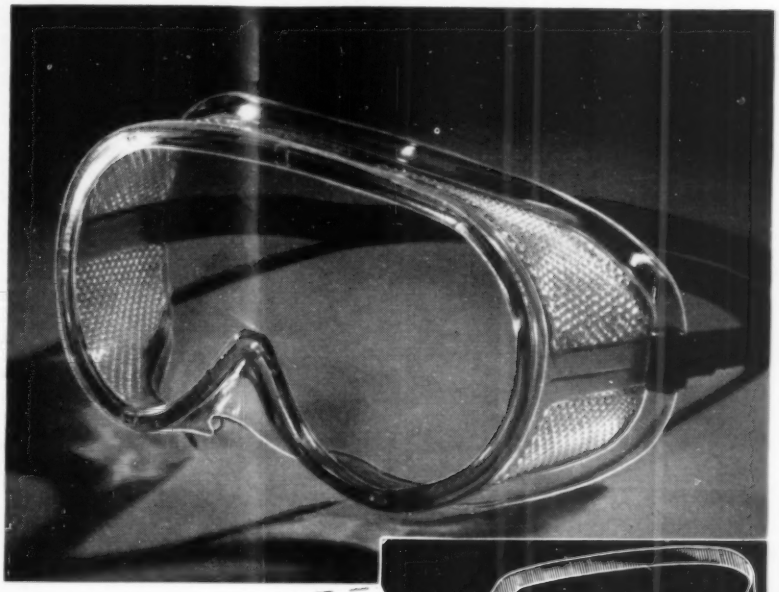

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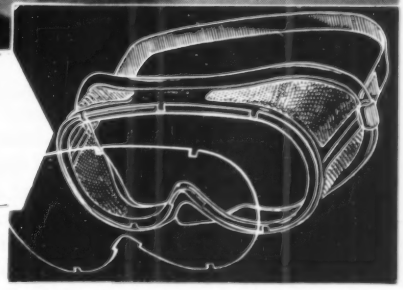

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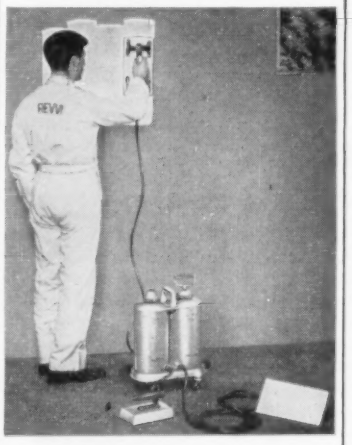

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An account of the uses for psychology in industry, notably for staff selection and intelligence tests

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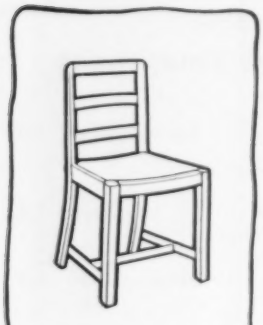

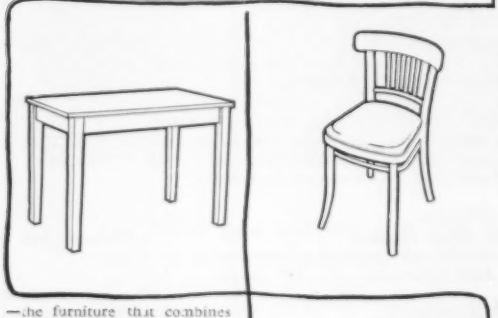

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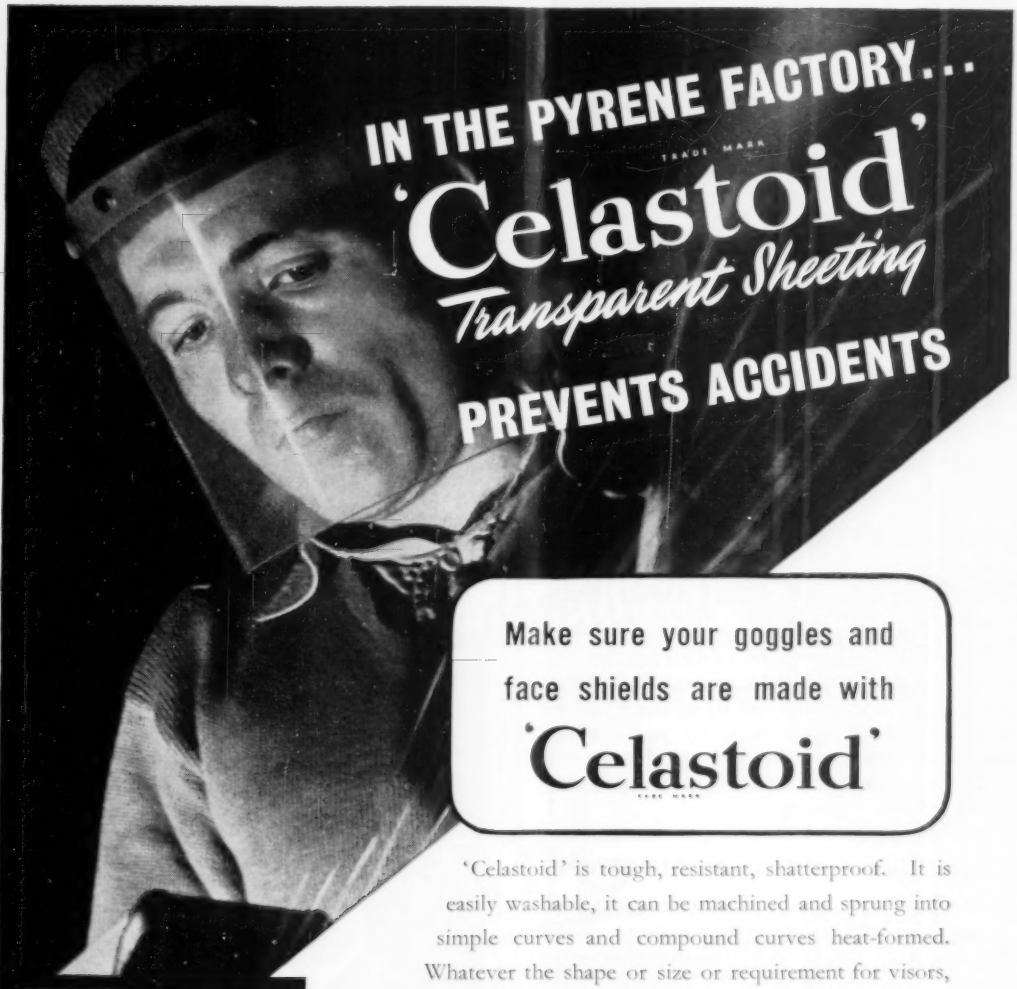

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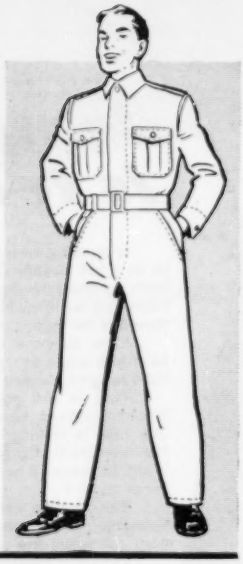

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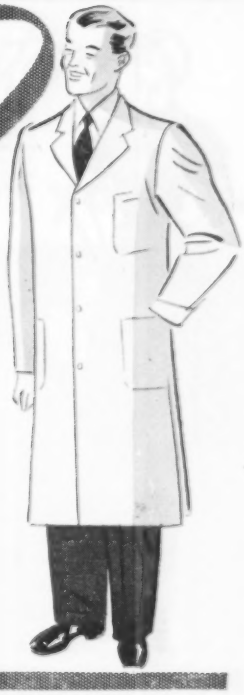

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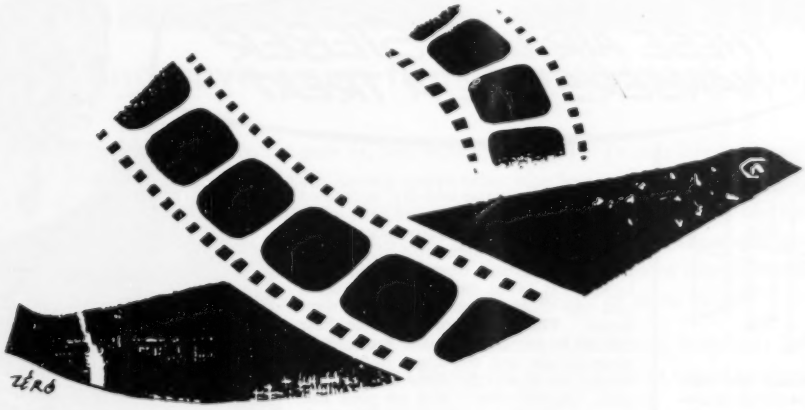

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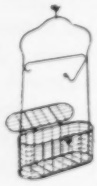

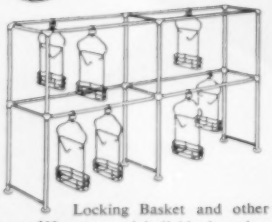

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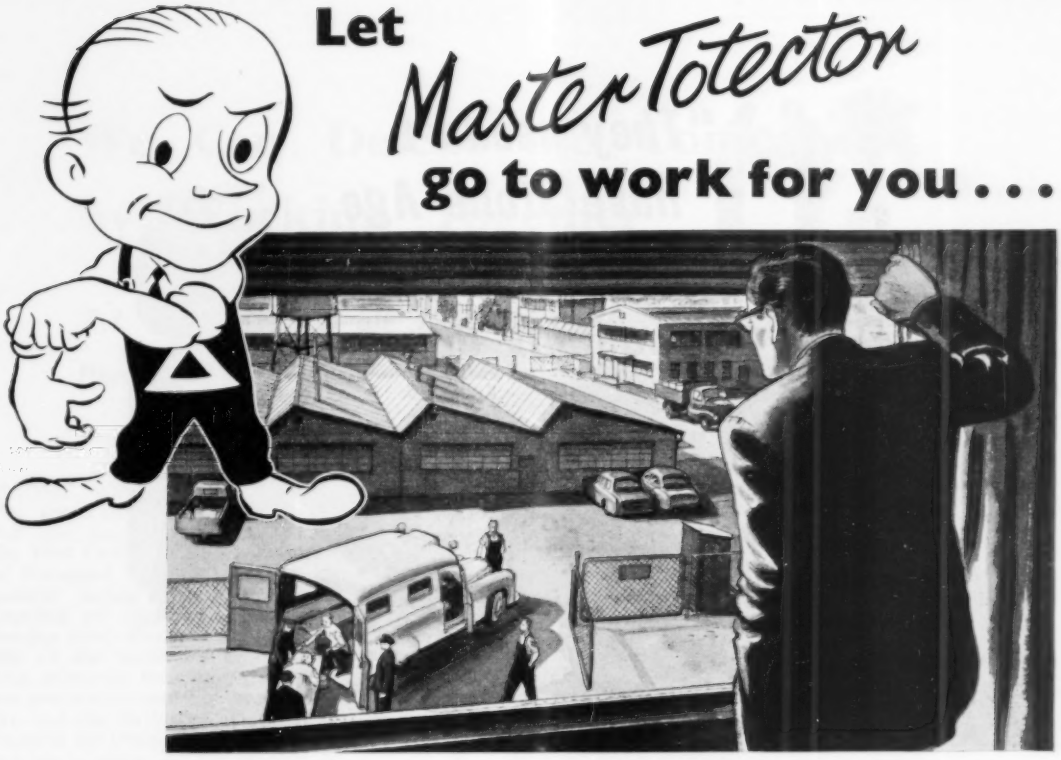

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T.U.C. President on Rôle of the Personnel Manager

Mr. C. J. Geddes, T.U.C. President, addressing delegates at Harrogate.

SOME 800 delegates, speakers, guests and officials met at Harrogate from October 8 to 10 for the 1954 Conference of the Institute of Personnel Management, and the general feeling, as the President rounded off the Conference about Sunday noon, was that this had been one of the Institute's best efforts. This, primarily, because of the variety and provocative nature of the speeches. We had the forthright eloquence of Admiral Sir Denis Boyd, Principal of Ashridge College, on the problem of leadership; the penetrating objectivity of Sir Miles Thomas, B.O.A.C. Chairman, on the changing scene in management; and Mr. J. B. Priestley worried and candid in his views on where industrial man was going.

Pride of place, however, must be given to the address of Mr. C. J. Geddes, this year's general president of the T.U.C., who spoke on "The Trades Unions and the Future." The impact on his audience was in direct proportion to the importance of his message, the gist of which was as follows. Communists have by no means diminished their attempts to gain control of the Trade Union movement and so wreck good industrial relations. **Personnel managers can play a very important part in frustrating this attempt by co-operating to the full and wherever possible with genuine trade union elements.** And they must realise that trade union officials themselves often found their members exasperating. Even so, this was no excuse for not trying to understand and help.

Reported by

ROBERT McKINNON

Mr. Geddes began by stressing that he was putting forward his own personal ideas. After a "glimpse into the past" during which he discussed the reasons for the changing methods of approach employed by trades unions, he went on to discuss the industrial coalition brought about by the last war. From that there grew a greater understanding between both sides of industry and today we had the incredible position in which, through their representation on the British Productivity Council and other bodies, the trade unions were paying to discuss ways and means of increasing production.

"We've travelled the half-circle," said Mr. Geddes, "where do we go from here?"

In his answer, Mr. Geddes began by emphasising his belief that the fundamental purpose of the trade union movement would not change, at least in the immediate future, nor would it abandon its right to strike.

"Unless a trade union leader does what his members want him to do, he would cease to be a democrat and also a trade union member", he added.

Policy was determined by the ordinary member, and the leaders had not changed their political ideas—they had not ceased to be Socialists.

Mr. Geddes then answered a verbal

questionnaire of his own devising. The questions were:—

1. *Will the trades unions regard strike policy in future as outdated?* No, this could never be completely abandoned.

2. *Will the trades unions move more and more towards the idea of a national wages policy?* No, because the movement would largely sacrifice its purpose if it did so.

3. *Will the trades unions become merely a part of a national conciliation machine?* No, they will probably take a more informed part in this work, but they will not be absorbed.

4. *Will the trades unions demand a greater share in the management of industry?* Yes, and in the immediate future, but I do not mean joint control. However, we ought to be regarded as equal in status with management. We deplore the secrecy which seems to be observed by many British firms, especially compared with the practice in the U.S.A.

Mr. Geddes' Formula For Personnel Managers—

1 **The patience of Job.**

2 **The sympathy which passeth all understanding.**

3 **The subtle cunning of the trained diplomat.**

4 **The analytical brain of the scientist.**

5 **The bargaining persistence of a Shylock.**

Then, Mr. Geddes went on to his remarks about Communism. "Don't underestimate the threat of Communism in the trade union movement," he emphasised, "it is not as loud-mouthed as it was but it has not diminished. . . . The Communist wants to kill good industrial relations because he wants control of the trades unions. He knows that this is not the first step but the last step to power. As personnel managers, yours is a great responsibility. Work with the democratic trade union leaders whenever you can."

Mr. Geddes ended by acknowledging that working together was not always easy. But that was why the ideal personnel manager, in his opinion, should have the patience of Job, the sympathy which passeth all understanding, the subtle cunning of the trained diplomat, the analytical brain of the scientist, and the bargaining persistence of a Shylock.

"Industrial Man Facing Two Dangers"

IN the opinion of Mr. J. B. Priestley, who addressed the Conference on "Industrial Man—A Writer's View", the rapid progress of the machine was carrying with it two main dangers. The first of these was that "a highly industrialised urban life may rob men of so many of their primary satisfactions that, in their sense of frustration and resentment, they will create a society so violent that it will explode in our faces". The second danger to man in this industrial age (assuming that the first did not happen) was that man would be so contained and become so docile that our whole industrial society would run down. "And—I am going forward generations—it will run down", he added, "because we are not producing good human beings to run it."

Mr. Priestley described himself as a product of industrial man, most of his forebears having worked in the mills of West Riding. The wages were low, the hours very long and the conditions often appalling. It was all very rough and tough. "And although one could not possibly go back to it and every step that was taken to improve those hours and conditions and wages was a right and necessary step, yet in a queer sort of way things were better than they are now."

The explanation, he thought, lay in the fact that then industrial communities were more closely-knit, more virile and more democratic. "One man might be a millionaire, and another might get his thirty bob a week, but they still called each other 'Sam' and 'Joe' and there was no nonsense between them. The man who made the money out of the muck lived with it, which was a very good thing in my view."

Coming to the present, Mr. Priestley quoted Jung's opinion that our modern urban life was the most dangerous life that men had ever attempted to live. "The opinion that man is a blank slate on which you can write anything is really a mistaken one." Besides, the English loved to use their energy intermittently and too many people, he thought, did the same routine too long. "If I had a dullish job", he said, "I would much rather do it at odd times. I would like to see us get away from this insane business of everyone being off at the same time." The more we could be temperamental about this the better, the more we could be flexible, the more we could make machines obey our will, instead of having to obey theirs, the better it would be and the further we would be away from the dangers created by a growing sense of resentment.

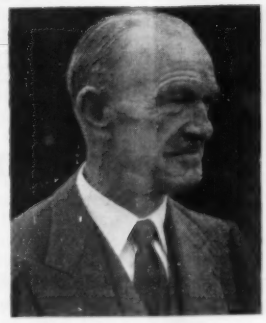
Of the second danger—docility resulting from a general inertia—Mr. Priestley attacked in particular not industry but mass communications which were building up a "terrifying mass mind". He said:

"The reason, I think, why our young working people are not showing their former enterprise, is that there has now been created, and this is quite new, a complete mass working class culture. It is just waiting for the boy and girl as they leave school; they walk into it, and they may never get out of it. Fifty years ago a lot of people never read Wells, or Bennett, or Galsworthy, but these people existed for them as figures. They knew about them—so there was always the chance that they might pick up some ideas from them. But now, instead of being on the edge of a real culture, they are trapped in a new mass culture which has been designed entirely for them."

J. B. Priestley: "Individuals or ant-heaps."

Mr. Priestley ended by stating that, to keep industry going, we needed a number of young men and women who were real individuals, who had initiative and thought for themselves. "Because", he added, "we do not want our great grandchildren to be living in an ant-heap and to be indistinguishable from the robots they may be making to serve them."

Four Attributes of Leadership



Admiral Sir Denis Boyd

WHAT Admiral Sir Denis Boyd, Principal of Ashridge College, had to say when he gave the opening address at the Conference was very warmly applauded indeed. But it was a provocative speech on "Training for Leadership" and, from the comments of delegates afterwards, it was obvious that opinion was sharply divided. The question at issue seemed to be "Does leadership in industry require special skills, or merely those required of leaders in all walks of life?"

Sir Denis himself took the view that the techniques and not the qualities of leadership varied according to the job. And despite the forthright nature of his delivery and a strong flavouring of naval anecdote, his address was a plea for humility from all those invested with the responsibility of leadership. "The outstanding character can get away with murder, but it would be unwise to assume that you are outstanding."

Nor was leadership simply a question of exercising authority, even doing it efficiently. True, all in authority had the ability to use fear over those under them. We could drive men to do our will or "we can and, if we are to lead, must see and try to develop in all men their positive God-like qualities."

Sir Denis listed four attributes which, in his opinion, were inseparable from good leadership. These were:—

1. *Enthusiasm.* "Industry has this too, if only it knew how to winkle it out and use it."

2. *Austerity.* Which springs from self-discipline.

3. *Genuineness.* The quality which makes those who are led put up with the faults of the leader.

4. *Humility.* "How can you treat man as built in the image of God unless you believe in God?"

"To lead others", stated Sir Denis, "you need only be a decent human being, not something out of this world."

Where the actual exercise of authority was concerned, two necessary qualities were true knowledge of the job and the ability to convey this knowledge to others. He urged his audience not to envy the gift of the gab which anyone could acquire, he claimed, with practice and hard work. Yet a leader should develop the ability to speak. In brief, he should know what he is after, believe in it himself, and know his language.

Management's Changing Scene

LIKE Mr. Geddes, Sir Miles Thomas looked back first in his address before going forward. His theme was "Management — The Changing Scene" which he presented in three parts: the breakdown of management into various specialised techniques; the changing balance of specialised management; and the responsibility of industry to social and economic change.

Sir Miles traced the history of the industrial unit from the days when the owner was the boss of everything and did all the hiring and firing himself Gradually, the firm grew to the point where it was too much for one man to manage, so it was turned into a joint stock company and a number of specialised departments set up, such as production and sales.

After the first war, the ability of British industry to sell the goods it was producing first became a problem of any magnitude, hence the emphasis in many firms was on selling techniques. With the depression came the need to cut costs drastically, a phase in industry which marked the rise of the accountant. After World War II, said Sir Miles, there was an overwhelming and critical need for men and women in industry to be regarded as individuals. Thus personnel management rapidly became of specialised importance. Although he knew that in many firms personnel management was well advanced before the war, he thought of it as belonging essentially to this day and age.

Coming to the third branch of his theme, Sir Miles stressed that the significance of the individual could be expressed in a practical way by selecting the right man for the right job. That was worth money to the man and to the firm. Nevertheless, he saw a tendency for too many talented young men to enter industry "with little or no idea of the 'humanities of industry' who neither know where they want to go nor why." For that reason he thought that young men of promise should first spend two or three years in a factory or commercial office and then go on to University.

On the place of the personnel manager in the hierarchy of departments, Sir Miles said that the top personnel officer ought to be responsible to the man at the very top and that he should be wholly acceptable to all other top executives. He should have a lively sense of

Sir Miles Thomas

humour and should be something of an idealist, too.

"Many trade union officials", he said, "do not like personnel managers because they don't regard them as the real boss—but in that they are 10 years out of date."

Sir Miles's claim is all the more interesting in view of the plea put forward by Mr. Geddes. Here, if anywhere, is a need for effective communication.

There are many ways in which industry can exploit the film, and to-day more and more firms are making use of it. This article discusses some of the main uses of the moving speaking image as a means of training staff and helping production.

How Films Can Benefit Staff and Boost Output

Our front cover shows some scenes from the first two films to be completed in the BACIE Visual Training Unit series, "First Impressions" and "Supervise With Care". Here are further scenes.

By J. D. RALPH, M.B.E.
Industrial Division, ***G.B. Equipments Ltd.***

"First Impressions." The new man is introduced to his workmates. In a previous sequence he was left to fend for himself.

"Supervise With Care." This time the foreman doesn't appear to snoop, but tells the operative in a friendly way what he is doing and why.

"Supervise With Care." The foreman discovers too late that the clueless apprentice had the sort of talent the drawing office wanted.

THERE are probably few personnel managers who have not had the doubtful privilege of being pioneers, filled alternately with hope and a despondent determination. Not infrequently he has to face the suspicion of the employee body that he is little more than a streamlined version of the old "Hiring and Firing" Department. Perhaps, more than other departmental heads, he has had to fight for his budget in order to get those little extras—not frills—that would make a real training, recruiting or welfare programme possible ; extras such as a small lecture room equipped with film projector and screen, or, perhaps, an epidiascope and strip projector. But most important of all he must have the whole-hearted support of the management for his ideas.

An increasing number of firms are recognising the importance of applying films to industrial purposes. However, just because one's company has had a film made for "Public Relations," "Advertising" or "Sales" does not always means that the management have realised the full potential of the film medium ; how it could be used in their own training programme, in accident prevention or the stimulation of greater efficiency and productivity.

The enlargement of the scope and influence of the Personnel Department—which comes with the proper use of visual aids—is not always appreciated. By their use and the judicious choice of the correct films, the Department can, nevertheless, increase its influence on output and morale.

In many instances the effect can actually be measured in "units of production" or in a measurable increase in office efficiency. An example of the latter was quoted to the writer recently by the head of the Training Department of one of London's big Department Stores, *Dickins & Jones Limited* of Regent Street. In this particular case the film "Typing Technique" was shown at a series of special screenings to typists drawn from every office. The effect on general efficiency was instantaneous and was noted in each Department. **Here was a case where a film was used, not to train new employees, but to remind people already skilled in the standards of their craft**—no more inefficient handling of carbons, soiled letters, out-of-the-true margins and avoidable erasures. Small things perhaps, but important, as they illustrate a point which is sometimes overlooked, namely, the tendency for even the skilled worker to lower his standards, whether on lathe or typewriter, through the effect of repetition and routine. It, incidentally, reminds us of the fact that the showing of certain films can be repeated periodically with good effect.

This same firm provides an excellent example of how films can be used in the building of an effective personnel programme. In the case of a large retail business which handles a wide range of products, one of the main problems is to give its sales staff some general idea of what the products are that they are selling, as, for example, what is rayon, nylon, cotton, and terylene, and how are the special properties of each suited to particular requirements ? To answer questions from the customer on such subjects calls for a good background

knowledge on specialised subjects. It is here that films can be of great assistance, and, if used as part of a planned programme and suitably introduced, they can help to build a body of knowledgeable and confident employees, thus reducing staff turnover, raising sales turnover and improving customer relations. In addition, of course, films may be used for training in specific subjects such as materials handling, customer approach and correct speech (a tape recorder is also useful here).

The emphasis in the larger industrial or manufacturing business will tend to be placed on worker productivity. One finds a great demand for training films on specific engineering subjects and high priority will also be placed on accident prevention, health and hygiene. **Even in this type of business, however, it is important to remember that it is still essential to show the workman the end-result of what he is doing.** This has been found particularly true of firms which make full scale engines and/or components for other larger machines. For example, the well-known engineering firm, *D. Napier & Son, Ltd.*, have found films to be of great value in the training of apprentices. They have a small but fully equipped 16 mm. theatre for this purpose. Specialist films are shown as well as those of general interest and certain of these films are also shown to supervision staff and workpeople. They also have plans for "shooting" their own 16 mm. films of a specialised nature for use with their own organisation.

It is an interesting fact that the very first documentary films, produced in the early 'thirties, were concerned with the broad problems of personnel management, their immediate purpose being to raise the operating efficiency of the Post Office. Working under the direction of a very great public servant—Sir Stephen Tallents—producers such as John Grierson gave us a series of short films designed to inspire the average worker in the vast Post Office machine with a feeling of the importance of his particular job and a sense of the romance that lay behind the prosaic symbol of "the plodding postman."

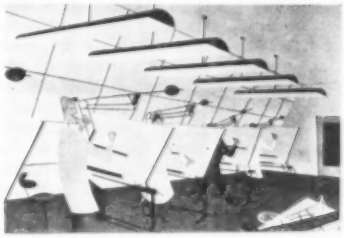
Recently at the special anniversary of the G.B. Film Library at the National Film Theatre, Sir Stephen Tallents, whose interest is still as great as ever, had this to say:—

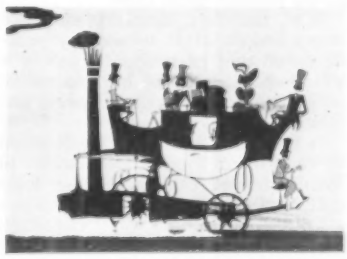
> "Films can show within an industrial organisation how men and women work; what part each specialised process is contributing to the total production; how machines work; how machines can most economically and safely be handled. Films, illustrating the work of different industries and different firms, can give unique guidance in their choice of employment to those who are on the threshold of their working lives."

As a result of the impetus which came with the war years we have seen a great increase in the application of visual aids to industrial requirements; there has been diversification and specialisation in the production field. We now have scientific or laboratory films shot on special cameras to analyse a specific process, also training films, general interest films, advertising and sales promotion films. These films are now becoming available to industrial users in increasing quantities through the larger libraries, such as the G.B. Film Library, the National Film Library, the U.S. Information Service and private firms such as *Shell*, *I.C.I.* and others.

Despite the help that this growing film production provides, the enterprising personnel manager still faces the problem that in many cases the particular type of film that he needs most is not yet available and in fact has not yet been produced. The counsel is not to despair but to see that his company joins such bodies as B.A.C.I.E., which help to analyse the requirements of industry and to arrange for and encourage the production of the much-needed films.

Also, we should note the practical help being given by other organisations such as the British Productivity Council (production of a series of training films) and the Federation of British Industries (publication of "Films for Industry"). Thus, a new ally awaits the firm with vision.





Industrial films need not be confined to training themes. These pictures come from a delightful little cartoon entitled "The Moving Spirit" made by the **Anglo-Iranian Oil Company** to boost the product.

6 Advantages of the Film

1. IMPACT. Close-ups and graphic presentation drive home the message.
2. RANGE. Almost any topic can be the subject of a film.
3. TRAINING. The film can keep skilled workers up to scratch as well as train novices.
4. PERSPECTIVE. Showing all workers how the factory operates as a whole.
5. PUBLICITY. A film is a first-class means of boosting the product.
6. SPECIALISATION. Specific problems — e.g. hygiene or safety — can be highlighted.

The Psychologist Can Help in Personnel Work

Even though much scepticism still exists, industry is now coming to accept the psychologist as a friend, claims the writer. And in view of the increasing attention being devoted to human relations, he goes on to discuss the various ways in which the knowledge of the industrial psychologist can be profitably used. It is an expertise of especial value in maintaining the sharp and necessary distinction between man and machine.

By MAX GORDON

PSYCHOLOGY, in the minds of many people, is the study of the crank and of the neurotic. A psychologist, they believe, is a man who puts his patient on a luscious couch, then takes down on an oversized writing pad the stream of unconnected words that emanate from the patient's mouth. The image of a psychologist as a pseudo-scientific "quack" has been formed with the help of a large amount of worthless popular writing on psychology which has been published since the last war, aided and abetted, too, by some so-called psychological films.

It is, therefore, not surprising that many industrialists consider psychology and that particular branch of it which should concern him, industrial psychology, as something unreal and fanciful.

A few years ago when I was asked by the Liberal Studies Department of the Technical College in the large industrial town in which I live to give a course of lectures on "Industrial Psychology", I was at first taken aback by the apparent hostility of a large section of my students (consisting of a large sprinkling of workers *and* managers) towards both industrial psychology and the industrial psychologist. It appeared that most of my students had joined the course out of curiosity, thinking that I would be unable to allay their fears of the impracticability of the whole subject. In the course of my lectures, however, I had the good fortune to be able to dispel much of this cynicism.

A psychologist must not be indignant at this attitude which from the psychological point of view is understandable. Occupational psychology—which is probably a more accurate name than "industrial psychology"—is a comparatively new subject. The occupational psychologist has to have a wide knowledge of his subject and faith in its future. He must be a scientist and a pioneer.

As Professor L. S. Hearnshaw of Liverpool University aptly pointed out at last year's Annual Conference of the National Institute of Industrial Psychology, "at the beginning of the present century few persons had the vision to foresee the tremendous development of motor transport which the coming half-century held in store". When in 1900, Professor Hearnshaw said, the 1,000-mile car trial around Britain was organised, it was designed partly to counter the ridicule and dislike of the public for this new, noisy and as yet unreliable contraption. In spite of public opposition the pioneers themselves had faith in their invention. They proved to be right.

Similarly, the last fifty years have witnessed a tremendous change in industry. More and more, the human side has become a matter of concern and attention. Personnel management, industrial welfare, human relations between worker and manager and among the workers themselves, have become top-priority subjects. It is interesting to learn, for instance, that in the United States of America with its industry at top-gear, business executives now read more books on personnel management than on economics. This interesting fact came to light in a survey on the reading habits of business executives in America.

Again, to the psychologist, it is not surprising that in an age of the conveyor belt, of the automatic machine, of the thousands of soul-destroying monotonous jobs, the accent should move from the mere technical to the human field. This being the case it is clear that psychology which means the study of the mind and of human behaviour, was bound to enter the vast field of industry.

It is only fair to say that failure to appreciate the work of the industrial psychologist has not only been due to misconceptions on the part of the manager and worker. Many psychologists, in their eagerness to reform industry, have moved too fast, thus sowing distrust and incredulity. These initial mistakes were unavoidable. On the whole, however, relations between the psychologist and industry have vastly improved during the last few years. The position at the moment is that the psychologist has a better understanding of industry and both sides of industry are coming to accept the psychologist as their friend.

The better understanding by the latter is due to no mean degree to the undoubted achievements of the psychologist. The question "Is the Industrial Psychologist A Good Investment?" can best be answered by relating some of the achievements by which both sides of industry have benefited.

One of the subjects in which the industrial psychologist has proved to be a "sound investment" is that of *industrial fatigue*. Fatigue is one of the general factors determining efficiency of work. The industrialist

is interested from the production angle, the worker is concerned because fatigue impairs his efficiency and increases the drudgery of work. Now, before the psychologist set about studying cause and effect of fatigue, it was commonly assumed that all fatigue was caused by exertion of the muscles and that the only remedy was rest.

We know now that this physical fatigue is only one, and a minor, aspect of the problem. What is usually known as "industrial fatigue" is a mental state of boredom which is caused by lack of interest rather than the expenditure of energy. This kind of fatigue is loss of control over the direction of nervous impulses with the effect that the attention of the worker begins to wander. He feels weary and unable to concentrate. As a result his output declines and he is also more prone to accidents. Indeed, it has been suggested that the hours between 11 a.m. and 12 noon and between 3 and 4 p.m. are the ones in which accidents are most likely to happen. Having discovered the cause of this kind of fatigue, the industrial psychologist has wasted no time in suggesting remedies. During work time, a number of relatively short rest periods is far better for the heavy muscular worker than one or two relatively long ones. At home, a considerable change from the normal kind of work will refresh the tired worker. A miner, for instance, coming home weary and tired after a spell underground, will find relaxation and a replenishment of his energy by digging his garden, although the digging operation in itself is heavy manual work ; but it is different.

Taking the investigation of fatigue one step further, industrial psychologists have made valuable discoveries on the effect of *routine work*. It was found that routine work need not be monotonous. A great deal depends on the intelligence of the worker. Charles S. Myers in *Industrial Psychology in Great Britain*, gives some striking examples of the effect of the monotony of routine work on efficiency. He concludes that "while monotonous work requires an appropriate degree of intelligence, it suffers appreciably if too great intelligence is brought to bear on it". He goes on to say that "interest—whether immediate or remote, whether innate or acquired, is essential for successful occupation". Even acts which have become habitual, for which no mental effort is needed, cannot be performed for long, he concludes, if all interest is lacking.

Since the overwhelming amount of work in industry these days is monotonous because it consists of a multitude of identical actions, a great deal would be gained by industrialists and workers alike if jobs were allotted more in accordance with the intelligence of the operatives. Here, the employment of an industrial psychologist would, indeed, be an excellent investment. There seems to be at the moment little chance of such a suggestion being widely adopted in industry. Many workers will probably object to being given intelligence tests, though such a move might bring them financial gains, especially if they are on piece work. Yet it is quite clear from the psychological research conducted so far that the less intelligent workers do much better in monotonous "soul-destroying" jobs than their more intelligent workmates.

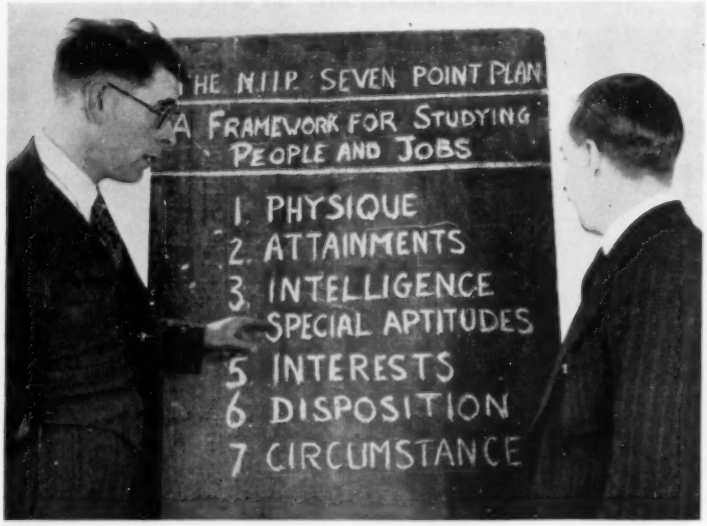
We know that the future of all of us will largely depend on the maximum utilisation of limited resources. Not only do we at the moment "squander", as Professor C. A. Mace has shown, "unlimited riches and sources of material, we also squander human energy and skill". Large-scale production through subdivision of labour has not reduced the demand for human skill. Thus the industrial psychologists have enquired into the nature of *human skill* and their most economical utilisation. Generally speaking, we know now, that the industrial worker is much more of an individualist than was assumed hitherto. He does not like working in large groups where his identity is forgotten. He will give of his best in smaller units, where the leaders of the group are intimately known to him.

We also know now that the "social skill" of a worker—and especially of

(*Continued on page* 256)

Psychology Can Be Used For :—

1. *The investigation of industrial fatigue and/or boredom.*
2. *Assessing the intelligence of staff and operatives.*
3. *Helping to find the best man for a given job and making the best use of human skills.*
4. *Developing innate qualities of leadership.*
5. *Good machinery design and working methods.*
6. *Working out fair and effective incentive schemes.*



"More and more, the human side has become a matter of concern and attention."
(Picture by courtesy of *The National Institute of Industrial Psychology*.)

Industry's Civil Defence Needs

"AT no time since Civil Defence was revived has the task of the Civil Defence officer been quite so difficult, and at no time has there been so much cynical fatalism and frightened bewilderment as exists today," Mr. A. G. H. Brend, chairman of the Society of Industrial Civil Defence Officers, told the Society's second annual convention at Scarborough.

There was no doubt, said Mr. Brend, that the pulse of Civil Defence had slowed down in the last few months, and the general atmosphere today was one of marking time. The Society itself had prospered because "it has not given pages and pages of evasion and wordy procrastination, but positive guidance and definite information"—which was, in fact, a realistic approach.

A general feeling of the 200 delegates was that top management was apathetic for the most part to the present ideas of dealing with atomic warfare. It was said that 75 per cent of the firms in the country "couldn't care less", and that there are at the moment only some 2,000 industrial Civil Defence officers compared with an estimated requirement for 11,000. It was generally considered that the lead should be forthcoming from the Government rather than from themselves. Treatment of industrial Civil Defence was criticised; information, it was alleged, was passed to the service long after it was sent to the corps of local authorities, and again there had been no official reason given for the failure to make radiac instruments—an essential training need—available to industrial Civil Defence.

Addressing the conference, the Under-Secretary of State to the Home Office, Lord Lloyd, declared that the special problems of industry were not being left out of the Government's revision of Civil Defence plans. Speaking on the dispersal of industrial plant, he said that it would not be realistic to suppose that it would be physically possible to effect any large-scale redistribution of industrial premises, but there were other possibilities which required following up. If you could not move a factory, it might be possible temporarily to evacuate skilled workers or specialised plant to areas which were likely to be less vulnerable to attack.

The Government, Lord Lloyd continued, attached importance to the development of the industrial Civil Defence service. There was no doubt in their minds that the risk of hydrogen bomb attack made it more than ever necessary that skilled forces should be available to save life. As plans for Civil Defence against attack with nuclear weapons developed, it was more likely that more and more would be called for from industry. There were now 10,000 instructors available to industry, and over 150,000 recruits in training. There remained, however, as many as perhaps 3,000 firms which had so far made no response to the Government's invitation, whilst of some 12,000 industrial Civil Defence units eligible to join the industrial Civil Defence service, only 2,870 units had so far registered.

Renting to Employees

ALL companies which let unfurnished accommodation to employees may be affected by the Rent Restrictions Regulations, 1954, which came into effect on August 30, 1954. These regulations set out the form of a notice which must be included in all rent books covering properties within the Rent Restrictions Acts (i.e., generally those with a rateable value of not more than £100 in London or £75 elsewhere). All rent books of such properties should therefore be amended to include this notice in place of that specified in the Regulations of 1940 which have now been revoked. The new regulations are S.I, 1954, No. 1035, and can be obtained from H.M. Stationery Office.

Under the Rent Acts, landlords are obliged to provide a rent book for each controlled tenancy under which the rent is payable weekly and it is an offence if a rent book is not supplied, or if it does not include all the prescribed notices.

Aid for Industry

IN an explanatory leaflet issued recently by the Board of Trade, details are given of the new Conditional Aid Revolving Fund for Industry which has been set up to provide short-term loans to small and medium sized firms to improve their productivity.

The industrial part of the Fund has been allocated £700,000 and, in order to spread the benefit of the Fund as widely as possible, applications are normally being limited to £30,000, although no fixed maximum or minimum has been laid down. Preference will be given to projects which promise a quick return through better production methods.

Among the principal conditions incorporated in loan agreements are: (*a*) repayment to be made by instalments within a period of up to three years, or, in exceptional circumstances, up to five years; (*b*) the rate of interest is 4 per cent payable half-yearly on the balance outstanding; (*c*) adequate security is required; (*d*) **knowledge and experience gained as a result of the loan are to be passed on to other industrialists likely to benefit**; (*e*) benefits of higher productivity resulting from the loan are to be shared equally between the borrower, his work people and customers; and (*f*) products to be sold under full competition.

'Ice-breaking' Tie

SENTIMENT is not the only reason why the "600" group of companies have designed a tie for senior members of their staffs. Its function is primarily to replace button-hole badges as a means of identification—and of breaking the ice.

The design strikes a balance between legibility and sartorial discretion. A small "600" motif is woven in silver-grey on a plain maroon background which "goes" with most suits. (**Business,** 10/54.)

TELLING THE STORY

Hoover employees gather round an exhibition panel designed to show them how the company's sales-service organisation works both at home and abroad.

Efficiency on Show

THAT "the efficient factory is the safe factory" will be the theme of the 1955 Safety and Factory Efficiency Exhibition sponsored by the Birmingham and District Industrial Safety Group. This biennial event is being staged at Bingley Hall from June 24 to July 1 next.

Parties of workers, from small and medium-sized firms in particular, will visit the show, and it is hoped to hold special conferences for those interested in factory efficiency and safety. About one-fifth of the total space will be occupied by a model of an ideal factory, complete from clocking-in station to despatch bay.

The last exhibition in 1953 attracted some 20,000 visitors.

Atoms and Industry

TO encourage industry to play a greater part in the development of atomic power, the United Kingdom Atomic Energy Authority has opened a reactor school at Harwell. For a fee of £250 it will provide a three-months' course for staff from industrial concerns to learn the techniques by which heat from atomic piles can be converted into useful power. Three courses will be held each year, starting in September, January and May. The syllabus includes lectures and individual instruction in nuclear physics, reactor-physics, metallurgy, and reactor engineering. Lectures are given by experts from various divisions at Harwell, and by the full-time school staff. At present there is temporary accommodation for about 25 students. Applications for places should be made to the Manager, Reactor School, A.E.R.E., Harwell, Berks, giving sufficient information for the management to assess whether the nominee has the required academic standard for entry.

Safety Congress

THE RoSPA National Safety Congress is being held at Central Hall, Westminster, from November 2 to 4, and will be attended by delegates from all over Britain. The Minister of Transport, Mr. John Boyd Carpenter, will give the official opening address, and another speaker will be the Archbishop of Canterbury. Sir Charles Bartlett, managing director *Vauxhall Motors*, will give the Presidential address. During the three days of the Congress, special evening film shows will be held at the RoSPA Training Centre at Hyde Park Corner.

Factory Exhibition

THE 1955 National Factory Equipment Exhibition, to be held at Earls Court from March 28th to April 2nd, will be, it is stated, nearly seven times the size of the first Exhibition held in 1953. Exhibits will range from systems of prefabricating complete factories to modern power, heating, lighting and ventilating plant. Welfare and safety equipment will also be displayed. Conferences are to be held in conjunction with the Exhibition by the Institution of Works Managers and the National Industrial Fuel Efficiency Service.

More Business

THE Companies General Annual Report for 1953 (published by the Board of Trade) shows that 286,089 companies were on the Registers in Great Britain on December 31, 1953 (compared with 277,664 at December 31, 1952). Of these, 16,769 (16,875) were public companies and 269,320 (260,789) were private companies. During the year 1953, 13,329 new companies were registered; of these 13,189 comprising 21 public and 13,168 private companies, were registered with a share capital, the total capital of the companies so registered being £87.3 million. During the year, 4,906 companies were dissolved or struck off the Registers, and winding-up proceedings were begun in 3,458 cases, of which 430 were compulsory liquidations.

From The House Magazines . . .

Time and Motion

THE Department of Scientific and Industrial Research are conducting an experiment into working methods in retail distribution. The results will be published for the benefit of members of the Retail Distribution Association. A committee consisting of members of *Bentall's, Ltd., William Whiteley, Ltd.*, and the *John Lewis Partnership* will decide what parts of the report should be treated as confidential and not published. There is no doubt that some interesting facts will emerge from the investigations. Already in one hardware department it has been found that an assistant walked seven miles for £3 10s. worth of sales, and that on average the 16 assistants in the department spent 50 per cent of their time off the sales floor.
(**The Gazette**—*John Lewis Partnership*, 11/9/54.)

Staff Dossiers

"True to our house magazine title we do 'advance'. The 'Findex' system is being used from the head office of the Welfare Departments. These new cards contain the history and detailed records of every person in the Group, and they will produce in a very short time the information that is required so often by many managements. They serve as an up-to-date source of information to locate groups of people for many purposes. Numbers of employees in different operations, age groups, and particularly length of service and department details, are constantly required, and they must be always at hand, this being essential in a well-organised firm." ("**Advance**", Sept./Oct., 1954.)

Working Pensioners

"The pensioners' workshop, located at the back of the Central Maintenance Workshops' Canteen, was opened a month ago. The opening, an informal one, was made by Mr. G. Bayliss from whose suggestion the workshop has now become an accomplished fact. The room is very well equipped with a tool cabinet and work bench, and also occasional tables at which a game of dominoes or a cup of tea may be indulged in. The workshop will be opened on Tuesdays and Thursdays for the time being." ("**The Phoenix Gazette**", 9/54.)

African Leisure

"Good progress is being made on the great sports stadium which is being built in the mine township. When completed the stadium, which will hold 30,000 spectators, will be one of the finest in Central Africa." ("**Mufulira African Star**", September, 1954.)

"Shooting" Production

"At the beginning of last month parts of the Harlesden Factory resembled a film studio. The Company had given permission for film unit to take some shots in the Factory on behalf of *Messrs. Bowater*. These shots were to be incorporated in a colour film which that company is making to illustrate its various activities." ("**57 News**", October, 1954.)

Idle Hands

This is a true story. Arriving half-an-hour early for work one morning, a man of over 30 years' service thought that his overalls felt damp. What better, he decided, than to light a fire in a convenient stove? Now for some firewood; there's plenty in the next department, he thought. It just needs cutting up and there are two or three circular saws. Any fool can use them.

Fortunately the man didn't bleed to death before his mates arrived, and by the miracles of surgery he may come out of hospital with most of his fingers.

The moral? Do not tamper with plant and machinery even if it does look simple. (**Ruston News**, 10/9/54.)

Recruiting for Industry

After a successful year of recruiting boys during 1953, the project was continued of getting boys direct from schools. Many months of consistent contact with headmasters of selected schools has brought some fine results. A number of headmasters visited us and more were visited at their schools so that they could understand our requirements and see the opportunities we have to offer boys. The results were seen recently when 16 boys met for a one-day introductory course. All but one were the result of our drive at the schools. These boys are being placed in various departments of our organisation, and we hope each one of them will find a successful career with us. (**Krisson Staff News Bulletin**, 9/54.)

How to Reduce Accidents from Dangerous Chemicals

By H. PIRIE, M.A.
General Chemicals Division, I.C.I. Ltd.

A **Cassel** salt bath heat treatment furnace. Note the ventilation system and the extreme care being taken by the operator.

This article deals with the five main groups of dangerous chemicals in industry and discusses the main characteristics and safety precautions needed with each. The writer stresses that any chemical can be used with safety provided the real precautions are taken. This implies, however, that the properties of the chemical being handled must be learnt and understood, and this is a primary duty of both the management and workers concerned.

THERE are two ways of classifying dangerous liquids. The first is according to the nature of the product, and the second according to the hazards it presents. For the purposes of this paper, however, I shall classify dangerous chemicals somewhat arbitrarily as follows: (1) Compressed Gases ; (2) Liquefied Gases ; (3) Solvents ; (4) Corrosive Liquids ; and (5) Solids.

Before discussing the individual groupings, there are two general points which should be made. First, the precautions in a manufacturing works may well differ from those required in the user industries. Works personnel, both operators and supervisory staff, have acquired special skill in the handling of hazardous materials, whereas in the user industries this is often far from being the case. The second point is that the user must know the nature and properties of the product he is handling. It must be readily identifiable, by colour, in the case of compressed and liquefied gases, or by label in the case of other packages.

Compressed Gases

Governed by S.R. and O. No. 679, 1939, and subsequent exemption orders, compressed gases include air, argon, carbon monoxide, coal gas, hydrogen, methane, neon, nitrogen and oxygen. The fact that these gases are under pressure illustrates the importance of container design and handling.

The British Standards Institution publication, *British Standard Identification Colours for Gas Cylinders*, establishes a principle for the use of yellow to represent toxic and poisonous gases, and red or maroon for inflammable gases. Unless otherwise specified, the distinguishing colour band should be painted round the neck of each cylinder, adjacent to the valve fitting. The following examples indicate how the scheme operates:—

NAME	GROUND COLOUR OF CYLINDER	COLOUR OF BANDS
Air ..	Grey	None.
Carbon Monoxide	Red	Yellow.
Ammonia	Black	Red and yellow.
Freon ..	Part-coloured ; bottom end grey, neck end mauve	None.
Hydrocyanic acid	Blue	Yellow.
Phosgene	Black	Blue and yellow.

Of these, only the first two are compressed gases, the others being liquefied. In handling cylinders of compressed gases, rough handling must be avoided, and they must never be stored or used in close proximity to a source of heat. Although many of these gases are themselves free from hazard, carbon monoxide, hydrogen and methane are inflammable and explosive under certain conditions.

Carbon monoxide is an outstanding example of a highly toxic compressed gas. Colourless and odourless, it is dangerous at concentrations as low as 0.01 per cent. The symptoms of carbon monoxide poisoning are severe headache, mental confusion and collapse. An affected person may not realise the danger and continue to breathe the gas, so that unconsciousness and death may follow. Fortunately, carbon monoxide in the air can be easily detected by using apparatus described in the D.S.I.R. Leaflet No. 7.

One of the major hazards from coal gas arises from carbon monoxide formed by incomplete combustion. This risk is often overlooked despite the fact that in 1951 more than 100 cases of such poisoning were reported.

Liquefied Gases

A growing number of liquefied gases is being used in industry. There is no statutory legislation governing the use of containers, although recommendations for seamless cylinders appear in the Fourth Report of the Gas Cylinders Research Committee of the D.S.I.R., 1929, and for welded containers, such as drums and tank cars, in the Report of the Committee on Welded Containers of the D.S.I.R., 1930. The recommendations of these two reports have, in general, been adopted by industry.

The first thing to avoid in the use of liquefied gases is overheating of the containers. Cylinders and drums are filled to a definite ratio, calculated so that at the maximum temperature likely to be achieved in temperate

climates, there remains about six per cent. free air space in the container. The next danger to avoid is the suck-back of water into the container. A large proportion of the chlorine cylinders and drums which are filled are used for the treatment of potable or industrial water or for the sterilisation of swimming pools. If the container is allowed to run empty, or, if by attempting to withdraw too much gas, the remaining liquid is sub-cooled, a partial vacuum is set up inside the container. This can result in water being drawn back and reacting with the remaining chlorine to form hydrochloric acid which attacks the steel container with the evolution of hydrogen and thus forms a hazard not only to the user but to the transport companies and to the receiving works.

Careful planning is required for the siting of chlorine drums in chemical factories or on a large waterworks. Not only must the ventilation be adequate, but there should also be an easy means of escape to fresh air for the operator. Since liquid chlorine is used by a variety of people with varying technical skills, it is necessary that instructions be clear and simple ; and the operator should be told that, in cases of difficulty, he can obtain more or less immediate assistance.

Hydrocyanic acid is an interesting case because its high toxicity to most forms of animal life has made it widely used as an industrial fumigant. Companies carrying out fumigations have developed a highly specialised technique and their comparative freedom from accidents bears witness to the safety with which such apparently dangerous operations can be conducted.

Two newcomers to the range of liquefied gases which deserve special mention because of their high toxicity and other hazards are anhydrous hydrofluoric acid and chlorine trifluoride. The first, a colourless strongly fuming liquid, has a great affinity for water. It readily attacks many materials such as chemical lead, cast iron, wood, glass, porcelain, enamelware and even asbestos. The vapour is in irritant and toxic ; concentrations of more than 2 p.p.m.* in the atmosphere are considered unsatisfactory. Of increasing importance as a frequently effective substitute for elemental fluorine, chlorine trifluoride is classed as a low-pressure liquefied gas. Pale yellow in appearance, it is a mobile liquid, reacting explosively with water and igniting, often explosively, many organic materials containing high proportions of hydrogen.

* *Parts per million.*

6 SAFETY TECHNIQUES FOR DANGEROUS CHEMICALS

1 Compressed Gases

A distinguishing colour band should be painted round the neck of each cylinder to identify the gas. Cylinders must never be roughly handled or stored near a source of heat.

2 Liquefied Gases

Cylinders and drums must never be allowed to become overheated. Do not withdraw too much gas at the one time and use only in a place where the operator has easy access to fresh air.

3 Solvents

Impose stringent anti-fire precautions against inflammable products and see no vapours escape into the workroom. Label each container clearly according to the risk involved, and employ a medical officer wherever toxic substances are used.

4 Corrosive Liquids

Take special precautions to protect the skin and eyes and make sure that filling and discharge points are distinguished by suitable colours.

5 Solids

Safety rules vary according to the product, and makers' instructions should be carefully studied and carried out.

6 In all cases

The appropriate protective clothing must always be worn.

Solvents

Solvents cover an extensive range and divide initially into inflammable and non-inflammable compounds. Apart from any possible toxic hazards in using inflammable solvents, stringent precautions are necessary to avoid fire and explosion. Most chemicals can, under certain conditions, be poisonous to the human being and solvents are no exception. It is to be expected that substances which have the power of dissolving organic materials will have a similar effect on living organic materials.

There are three possible routes of entry of poisonous substances into the human body: (i) by swallowing into the stomach ; (ii) by inhalation into the lungs ; and (iii) by absorption through unbroken skin. The last mentioned is particularly possible with solvents having the power to dissolve fat, but the amount reaching the blood stream in this manner will be small and is, therefore, not of great importance. The local effect on the skin itself is a different matter and may well have to be taken into account.

By far the most common route of entry, however, is via the lungs, where the vast area of lung tissue brings about rapid absorption of the vapour into the blood stream. Certain solvents tend to attack one particular organ. These have chronic effects which result from prolonged exposure to small doses and industrially they must be regarded as the most serious as they are subsequently fatal or disabling. Acute toxicity, on the other hand, resulting from exposure to a large dose of vaporised solvent, is more often met with and unfortunately gains more publicity because of the dramatic effects which it produces.

Some solvents, notably the nitro- and amido-derivatives of benzene,

Workers handling demijohns of formic acid. This is a liquid whose corrosive nature is not always appreciated, yet needs to be handled with the same scrupulous care as sulphuric acid.

exert an acute toxic effect by combining with the hæmoglobin, or colouring matter, and thereby destroying the oxygen carrying power of the blood. Other solvents—for example, benzene itself—act as chronic poisons by damaging the bone marrow and thus preventing formation and liberation of new blood cells.

The unsaturated compounds, trichlorethylene, perchlorethylene and dichlorethylene, of which the first is by far the most widely used, have a narcotic effect if inhaled in sufficient concentrations. These differences are clearly indicated in the following table which is taken from the chart drawn up by the *I.C.I.* Industrial Products and Health Research Committee:—

Solvent	Concentrations in the general atmosphere of the plant greater than those given below indicate unsatisfactory conditions
Tetrachlorethane ..	10 p.p.m. (v/v)
Pentachlorethane ..	10 ,, ,,
Chloroform	50 ,, ,,
Methylene Chloride	200 ,, ,,
Perchlorethylene ..	200 ,, ,,
Trichlorethylene ..	400 ,, ,,
Dichlorethylene ..	500 ,, ,,

The precautions to be taken may be conveniently divided into those adopted by the user and those adopted by the seller. So far as the user is concerned the first obvious step is the substitution, wherever possible, of non-toxic or slightly toxic substances for those known to be dangerous. The second is to prevent the escape of vapours into the workroom. Third, wherever toxic substances are used the employment of a medical officer is highly desirable. Consultation with a doctor on the spot will often give a clue to the presence of solvent vapour, and will enable steps to be taken to prevent further absorption. Pre-employment medical examination can be a very valuable means of excluding persons likely to be susceptible to certain poisons. Finally, there should be co-operation between works medical officers, managers and workpeople in order that the specific risks may be fully understood and guarded against accordingly.

It is the seller's responsibility to ensure the adequate labelling of toxic materials. Each label should carry a signal word such as DANGER, WARNING, CAUTION, according to the degree of risk involved. Further, customers should be advised by means of personal visits on necessary precautions which must be taken.

Corrosive Liquids

The most widely used corrosive liquid is sulphuric acid or oil of vitriol. The two hazards, associated with sulphuric acid are its highly corrosive action to the skin and eyes.

Nitric acid and hydrochloric acid are also in common industrial use. Formic acid, however, is a liquid whose corrosive nature is not always appreciated and demands the same care in handling as does sulphuric acid.

Filling and discharge points may often be a source of danger and should be suitably distinguished by appropriate colours or preferably by prominent product name plates.

Solids

Dangerous solid chemicals are not easily classified. Many of these are innocuous, or nearly so, and this point puts the subject of chemicals in a proper perspective; indeed, it should not be assumed that all chemicals are hazardous.

Metallic sodium is still used in the purification of aluminium and other metals, in the manufacture of sodium compounds, in the production of tetra-ethyl, and in the pharmaceutical and dyestuffs industries. Its main hazard lies in its violent reaction with moisture. It should never be handled with the naked hands because of the inevitable presence of moisture on the skin.

Sodium compounds are used very differently and there are a number of them which are hazardous in varying degrees. Their main hazard lies in the fact that the molecule contains large quantities of oxygen and even if they do not start a fire, they will assist combustion in the absence of atmospheric oxygen.

In large-scale use for the bleaching of mechanical wood pulp, of most textiles and many other materials, solid sodium peroxide reacts violently with combustible organic materials and oxidises them so vigorously that fires can result.

Another sodium compound deserving of attention is sodium cyanide. Used in thousands of tons, it is extremely poisonous, the principal risks being: (i) accidental swallowing; (ii) absorption through the skin, particularly if the skin is broken; and (iii) inhalation, resulting from cyanide gas given off when the compound comes into contact with acids. First aid appliances must be ready for instant use in the case of injury.

Mention must finally be made of a group of the metals and their compounds which have been found to be extremely hazardous. These are arsenic, chromium, mercury and lead. The number of cases of arsenic and mercury poisoning is now fortunately very small—totalling nine in the last three years, as compared with 31 in 1900 and 17 in 1910. Chromium, however, continues to cause trouble.

Summing up, I would stress that industry cannot thrive without chemicals and that their use will inevitably increase. At the same time any chemical can be used with safety *provided that the real precautions are known and taken.* To know what precautions are needed means that managements and medical officers should make themselves fully aware of the properties of the chemical being handled. They should know in what way and by what route it affects the human system, whether there are chronic as well as acute effects, what is the minimum safe concentration in the atmosphere, at what concentrations and under what conditions it is inflammable, and what fire-fighting agents can be used if fire does occur. Accurate, precise answers to questions such as these can be obtained, if necessary, from the supplier of the chemical.

The workmen themselves should also be thoroughly acquainted with the type of hazard involved and with the necessary safety rules and the appropriate action in case of emergency. And if these relatively simple conditions are fulfilled, dangerous chemicals can definitely be handled with safety.

The Foreman Should Have *Real* Authority

Discussion Leader is much impressed by the recent report of the engineering team which visited the U.S.A. There, the foreman really belongs to management and is not its tool. The same status for the British foreman was urged by the M.o.L. Committee whose summing-up is discussed on the following page.

THIS month, I feel rather like the centipede in the verse:

"A centipede was happy quite
Until a toad in fun,
Said pray, which leg goes after which?
This raised his mind to such a pitch
He lay distracted in a ditch,
Considering how to run."

Looking at the volume of your correspondence I see that I ought to be running in at least four different directions at once. I have letters on leadership, letters on interviewing methods, letters on the woman supervisor, and finally letters on the relationship of the supervisor to his subordinates and superiors. Luckily for my peace of mind, an important sign-post, the Report on Industrial Engineering published by the British Productivity Council in September, is directing me to take this last road first.

This publication is a report of a visit to the U.S.A. in 1953 made by a British team on Industrial Engineering. It says a great many things of interest to British supervisors. It stresses, for example, as many of the earlier reports stressed, how the foreman is really thought to be part of the management team in America. "The foreman", the report says, "is kept in the picture all the time", and company policy in general is to assert the importance of the foreman. A substantial difference between his pay and that of the operatives reflects the responsibilities assigned to him. Tremendous care is taken in the selection and training of supervisors.

Applying this to British industry, the report recommends that "the responsibilities and authority and therefore the status and salary of foremen should be higher than they are, in the majority of companies in Britain. Foremen should be treated as part of management and not merely as a tool of management."

A letter I received from one correspondent in a small factory provides a vivid illustration of the British position to which the report refers. My correspondent described how his works manager and himself had decided on a new colour scheme for his department. Amongst other things this allowed for a certain machine to be painted green. Next day, accordingly, the foreman asked one of his men to start on this painting job. He was then called away from the department. When he returned, he saw the man wiping off the wet green paint. He asked him what he was doing, and the man replied that the works manager (who had presumably changed his mind) had just come in the shop and ordered him to change the colour of that machine to grey. My correspondent goes on to say that his words to the man were "not in my shop you don't—you go on painting it green"—and green it remained after the foreman had put his point of view forcibly to the works manager.

This works manager's action told the foreman (and his staff) that he was *not* part of the management. He was only a tool of management. The foreman by his reaction was trying to re-establish his own status and position of authority in relation to his men.

If foremen are to be treated as part of management, they must also fit themselves for this authority.

The report makes it clear that American foremen in the engineering trades *are* keenly aware of the need to learn. Their minds are open and receptive to new ideas. They are encouraged to attend meetings with their own senior managers and with industrial engineers and "many facilities are available in the universities for supervisors to give full or part-time study to new techniques". American supervisors, says the report, keep "on their toes". British managements will obviously be more inclined to follow the example of their American colleagues if they feel their supervisors are doing their best to adopt this attitude of open-mindedness and to develop new skills—particularly skills in dealing with people.

The Foreman's Powers?

How can we make the foreman's status secure and his authority real? In other words, what powers should he have? Readers are invited to send in their views on this vital topic. As usual, a guinea will be paid for each letter published.

LEADING BY LISTENING

I WAS, for example, walking through a section of a food factory some little time ago, with the foreman. We approached one group of girls and the foreman said to them quite sharply: "How often have I told you that you *must* wear your caps right over all your hair. Look, Mary—yours is perched right on the back of your head, what use do you think that is when it comes to keeping the food free from germs?" As we walked away from the group the foreman said to me: "You know those girls will wait till my back is turned and their caps will be back in the same old position."

It occurred to me then—"but isn't this foreman's mind also running down a one-track groove?" Is he not being "in fact not a bus but a tram"? His reprimands were not producing the results he desired—could he not have tried some different methods? If British managers have still to learn how to weld foremen into part of the management team, perhaps foremen must also be learning new methods of making their workers feel part of their team. I imagined how this incident might have been replayed. It might then have gone something like this:

The foreman could have called together the girls in the group and their supervisor, put the problem to

them, listened to their criticisms, discovered that it was the style of the cap which was objected to, and arranged for the whole matter to be thrashed out with the Welfare Department. He could, moreover, have suggested that the girls themselves draw up a new design of cap. This is approved by the Welfare Officer. Other girls express a preference for it, and the cap is eventually adopted as a new design for the whole factory.

The foreman has shown he possesses new skills. He has *listened* to his group. He has tried to state the problem in positive and non-critical terms. The group has then felt secure enough to voice its real views and feelings on the matter. The foreman has allowed them to blow off steam for several minutes on the same theme. He has then asked the girls to make a definite decision of their own. The group has then become involved in the decision-making process. Discipline—in the shape of wearing the caps—will inevitably come from within the group, as a consequence. The group will feel the foreman respects them as individuals. It takes patience and wisdom to conduct a conference of this kind. It asks the foreman to learn a new skill.

I note the *Financial Times* devoted a large proportion of a recent issue to "Human Relationship in Industry"—surely proof, if we need it, that this subject has "arrived"?

DISCUSSION LEADER

Safety Officers Meet

THE 1954 conference of the Institution of Industrial Safety Officers was held at the University of Bristol from October 1-3, the president, Mr. A. G. Palmer, presiding.

In his opening address, Dr. W. H. Garrett, technical director of *Monsanto Chemicals*, said that organised safety activities in industrial life is a comparatively recent phenomenon. With some notable exceptions it was not until about 1915 that realisation of the sheer necessity for safety dawned generally, and this conference was a demonstration of the extent to which industry in general had seen the virtue and value of "human" engineering.

Group discussions were conducted on "The personal factor remains the greatest single problem in industries with well conceived accident prevention organisations. In what way can the safety officer influence this aspect?" A paper on "Work Study and Safety" was presented by Mr. E. E. Britton, and the conference rounded off with a debate on "Accident investigation is solely the responsibility of the management".

Effective Training Demands A Lead From Top Management

By THE EDITOR

In the final section of their Report, the M.o.L. Committee stress that the main responsibility for training foremen rests with top management, and that they should be trained as members of the management team. In many cases, this may well call for a review of the methods of recruitment to supervisor grade as well. A top executive should be charged with the duty of seeing that the whole training policy is put into force.

LAST month we dealt with the Committee's ideas on how a foreman should be trained and the subjects in which he ought to be trained. We also mentioned the Committee's awareness that they were dealing with something in its "comparative infancy" and how, in their view, there was as yet no objective means of assessing the value of such training. In the final part of the Report, however, they make it quite clear that their faith in the idea of supervisor training was never in doubt. They state:—

"We think that it is a matter of great urgency to speed up these developments; in the present situation of British industry the supervisor can make a vital contribution to industrial efficiency and good industrial relations, and no steps should be spared or delayed to render him if possible still more effective. Indeed, if one is to judge from the experience of some leading British firms money spent on supervisory training is a profitable investment yielding immediate and lasting economic returns."

What the Committee does doubt is that all the efforts so far made have been along the right lines. They gained the strong impression that, in some cases, there has been a "misdirection of effort" although they claim to have had no actual evidence of this. For these reasons, the Report sets out three general conclusions with the object of helping industrialists and others working in the field of supervisory training to clarify their own thoughts on the matter and make their own decisions effective. These conclusions are:—

1. We must emphasise with all possible force that the main responsibility for the training of supervisors must be accepted by senior management.
2. We also wish to emphasise the need for more training related to the day-to-day work of the supervisor, training organised in such a way that the man who is already doing the job can easily profit by it.
3. The status of the supervisor needs to be examined by industry, and his importance as a member of the management team recognised and re-emphasised. Top management should give a lead in this matter. . . . **A review of the status of the supervisor should also be accompanied by a review of methods and standards of selection and the planning of future recruitment to the grade.**

From these general conclusions stem the more detailed proposals of the Committee which, as might be expected, begin with an examination of what ought to be done by the employer side of industry. Employers' organisations, they say, including the Boards of nationalised industries, should be invited, if they have not already done so, to study supervisory training on an industry basis, to stimulate the interest of member firms and to give them all possible help in formulating their own schemes. At the same time, individual firms should be advised to make one member of management responsible for ensuring that the policy and training programme is put into force. And this should include regular reviews of all that the firm does in this field as well as a study of the requirements of each supervisor. To this end, industrialists should also co-operate more closely than at present with technical colleges and other bodies which provide such training.

In this section of the Report, the Committee also advance the interesting proposal that supervisory training will be "most effective as part of a planned system of training covering the whole personnel of the firm from

4 MEANS TO BETTER SUPERVISION

1 Where a foreman is not already regarded as a member of management, his status should be reviewed to this end.

2 Top management must support and guide the whole training programme and review the method of selection to supervisor grade. A top executive should be made responsible for seeing that the programme is carried out.

3 A supervisor training programme should not be delayed until one is worked out for the firm as a whole.

4 Outside courses should tie up with the day-to-day work of the person being trained. There should be more co-operation between industrialists and technical colleges.

top management to apprentices and new entrants. It is particularly important in this context that the training of potential supervisors should not be overlooked".

The Committee, however, put forward no suggestions on the time factor which would be involved. Yet were firms to institute such a comprehensive training programme, it could only be carried out effectively if all members of the firm were prepared to give up some of their own time to this end. Training is very important, but industry's premier duty is to produce and there is a limit to the amount of working hours which can and ought to be devoted to instruction pure and simple. Again, the need for training is not the same for all ranks: it is clearly greatest where apprentices and supervisors (who constitute the direct link between top management and the work-force) are concerned. And no training programme for these should be scrapped or even delayed because no programme for the works as a whole can be worked out. Again, it could be argued that any firm whose top executives are in sore need of radical and immediate training cannot be an efficient firm. Industry must work on the assumption that its top men, although they can be made better, really know their job. The term "top executive" implies, or ought to imply, certain rare qualities rendered practical by long and arduous training of many kinds.

Where outside courses are concerned, these should be related as far as possible to the day-to-day work of the supervisors attending and should include a large measure of discussion group work. The Committee also thought that more short courses (as recommended in the report of the B.I.M. Sub-Committee on Foremanship Training in Technical Colleges) should be set up, particularly for the older supervisor. In this matter the advice and co-operation of local employers should be sought. Technical colleges in fact should take the initiative more often in approaching local industry for this purpose, especially in seeking help in the provision of instructors. Similarly with voluntary associations and adult education centres, the Committee was aware of the need for greater co-operation between these and industry.

Where T.W.I. Can Help

The conclusions concerning the Ministry of Labour and National Service recognise that the T.W.I. Service will be needed for some time ahead, especially for the training of T.W.I. trainers, a facility which no branch of industry is yet in a position to provide. Here, existing programmes should be improved rather than extended, and in the case of a small firm where a full-time trainer is not justified, a member of the firm should receive training as a T.W.I. trainer. Where companies require it, the Ministry should also be prepared to give substantial initial training on the job to the firms' own trainers. The existing three programmes should in fact be developed in close consultation with industry with emphasis on (*a*) *job instruction*, (*b*) *job methods* and (*c*) *job relations*.

Other Ministry services which could help were the Personnel Management Advisory Service, which could give information on request as to the courses available; the M.o.L. Regional Controllers who could help employers organise local conferences; and the possibility of using the M.o.L. Staff College at Letchworth for short courses for training officers in industry should be explored.

The Committee conclude their Report with the words:—

"Much if not all of the comment in this Report is recognised in whole or in part by many employers and they are either acting or planning developments accordingly. We feel that such firms will welcome what we have said. On the other hand it is clear that a very large number of firms have not yet appreciated the need for a different approach to supervision and supervisory training. We hope that these firms will derive some benefit from our inquiry."

As mentioned at the beginning of these articles, the whole Report hinges on the Committee's dictum that the supervisor must to-day be considered as a member of the management team. If managements go ahead on that basis, the question of training should become much more simple than it has been hitherto. And the foreman himself, apart from what he may learn, will benefit immensely from the knowledge that he is no longer in the invidious position of being neither industrial flesh nor fowl.

I.I.S. Look Ahead

AT a recent meeting of the Coventry Section of the Institute of Industrial Supervisors, Sir Percy Mills, K.B.E., president of the Engineering and Allied Employers National Federation, and president of the Institute, spoke on "The Supervisor's Place in Management." He said that, following the publication of the M.o.L. Report on the Training of Supervisors, the problem of how to carry this out was being widely discussed in industry.

The I.I.S. itself was making a most valuable contribution in this matter through two of its major activities: first, through its services to individual members, and, second, through its Supervisory Development Programme under which it arranged week-end courses for foremen and supervisors in all industries. In the 15 months until the end of 1955, no fewer than 44 courses would be held in England and Scotland, while local Sections would be holding over 300 meetings at 34 different centres during their winter session.

The Supervisory Development Programme was worthy of special notice. It consisted of a series of five courses on "The Practice of Supervisory Management," "Human Relations, Communications and Discipline," "Work Study," "Industrial Relations, Industrial Law" and "Cost Reduction". These courses were being repeated in eight centres throughout the country and were being strongly supported by industry.

By these two means, the Institute was bringing modern techniques and knowledge to several thousand supervisors each year, and providing them with the means of meeting one another and exchanging experiences and ideas.

To attract new workers from the surrounding district *Broughs Dyers and Cleaners*, of Little Lever, Lancs., are advertising the fact that the firm offers free transport to work by its own bus. The firm state that the special works' bus has already proved its value in attracting and keeping workers.

A Rising Payroll

PROVISIONAL figures of the average weekly earnings in the last pay-week in April, 1954, relating to 6¾ million manual wage earners are contained in the report of the half-yearly enquiry conducted by the Ministry of Labour and National Service.

The average weekly earnings of all manual workers in the industries covered —manufacturing and a number of the principal non-manufacturing industries— inclusive of bonus, overtime, and before deduction of income tax or insurance contributions, amounted to 166s. 6d. This compares with an average of 160s. 1d. in October, 1953, and 53s. 3d. in October, 1938. The increase during the last six months was 4 per cent, and since October, 1938, 213 per cent. Hours worked were 46.5, compared with 46.3 in October, 1953, and 46.5 in October, 1938.

The average weekly earnings for adult men in April, 1954, were 197s. 8d., compared with 189s. 2d. in October, 1953, and 69s. in October, 1938. The average hours worked were 48.3, 47.9 and 47.7, respectively.

More Workers

LARGELY due to the registration of young school leavers, unemployment during the month ended August 9 increased by 19,500 to 239,600. Many of these boys and girls were taking extended holidays before beginning their first jobs. There was a continued rise in the working population which, at 23,578,000, was 50,000 more than the figure for the preceding month. An analysis of the total number in civil employment during the same period (22,515,000) shows a similar increase over the June total (22,465,000).

Labour Office Closes

DURING the war the United Kingdom Government, with the consent of the Government of Eire, set up a Labour Liaison Office in Dublin to control the engagement of workers from Eire desiring to travel to employment in Great Britain, and to guide them into the most important work. In more recent years the number of workers making use of this service has fallen to a very low level, and in these circumstances the office was closed at the end of October as a measure of economy.

Electrical Hazards

THE annual report of the Factory Department of the Ministry of Labour and National Service on Electrical Accidents and Their Causes for 1952 shows that the total number of reportable electrical accidents in factories during the year—721 of which 38 were fatal—was very nearly the same as in the preceding years. A general survey of industrial applications of electricity is followed by sections on the stopping of dangerous machinery, instrumentation, fire risk and Tables on Failures of Explosive Violence and/or Causing Fire.

Birmingham Courses

PERSONNEL Management studies figure in the syllabus for the 1954-55 session of the Department of Industrial Administration of the Birmingham College of Technology. Restricted to those already holding responsibilities in the field of personnel work, the course initially covers Human Relations, Personnel Administration, Industrial Relations and Industrial Law. Other courses include Workshop Supervision, Work Study and Communication.

APPOINTMENTS

Council members elected at the Institute of Personnel Management's annual general meeting at Harrogate (October 8 to 10) were as follows: president, **MR. G. I. GIBBONS**; vice-presidents, **DR. A. S. ROY** and **MISS M. F. ROBERTSON**; treasurer, **MR. L. T. BLAKEMAN**; honorary editor, **MR. B. UNGERSON**; honorary secretaries, **MR. H. G. SMYTHE** and **MISS M. SHINGLER**; immediate past president, **MR. L. GALE.**

MR. N. G. FISHER, Manchester City Education Officer, has been appointed Principal of the Staff College for the Mining Industry, which the National Coal Board propose to open early next year.

MR. H. DARNELL, for the past 33 years principal of the day continuation school run by *Leyland Motors, Ltd.*, has retired. Since Mr. Darnell was first appointed, some 2,500 boys have passed through his hands into the engineering industry. He is succeeded by **MR. E. H. BAYLEY,** formerly of Openshaw Technical College, Manchester.

DR. R. J. DOYLE, manager of *I.C.I's* Metals Division Work Study Department, has been appointed to succeed **MR. J. A. G. COATES** as division labour manager. Mr. Coates is now factory manager at Kirkby.

IN BRIEF

BINGLEY HALL, Birmingham, is to be the venue of the third Safety and Factory Efficiency Exhibition to be held from June 24 to July 1, 1955.

* * *

The new session's programme of the Birmingham Productivity Association provides for a series of joint meetings with other organisations. The first was with the Institution of Production Engineers on September 15, followed on October 30 by a joint meeting with the Association of Supervisory Staffs, Executives and Technicians'. On November 24 there will be a meeting with the Institute of Industrial Technicians, and on April 5, 1955, with the Institution of Works Managers.

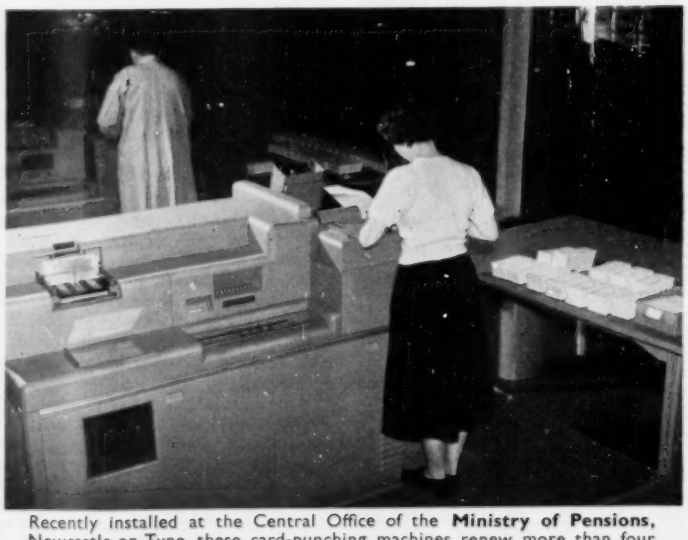
* * *

Under a recent Industrial Disputes Tribunal award, patternmakers in the engineering industry receive another 4s. a week on the existing craft differential of 4s. 8½d. a week that patternmakers in the industry receive over the skilled fitter. A 12s. supplement is awarded to time-workers.

* * *

The annual dinner of the Institution of Production Engineers was held on October 8th at the Dorchester Hotel, London. The President of the Institution, Sir Walter Puckey, was in the chair, and the principal speaker was Lt.-General Sir Ronald Weeks, chairman of *Vickers Ltd.*

PENSIONS MINISTRY KEEPS UP TO DATE



Recently installed at the Central Office of the **Ministry of Pensions,** Newcastle-on-Tyne, these card-punching machines renew more than four million pension order books yearly.

Basic Needs for the Small Canteen

By L. BANHAM, A.M.H.C.I., A.R.San.I.

This is the first of three articles on furnishing canteens of various sizes. They should be taken as a guide to basic essentials. This first of the series deals with catering for the firm of 100 workers.

THE equipping of a canteen in converted premises is mainly one of siting so that every effort is made to maintain a continuous flow of work from the point where goods are received to the point where the customer is served and back again through the return service. If the best use of any particular item of equipment is to be made, then it should be sited properly with reference to its influence on the production line and according to the observance of the principles of time and motion study. Where in doubt specialist advice should be sought.

Equipment manufacturers provide illustrated brochures of their products and state clearly what and how much these can do; and if they err at all it is generally on the side of understatement. There are odd points to bear in mind, however, such as the fact that a boiling-pan which is stated to have a capacity of, say, 30 gallons has not quite this capacity if the water itself is boiling. This is but a minor point. Generally, the maker states the minimum performance, particularly with regard to wear and tear, provided the article is properly handled.

Having decided how many people shall be catered for in the canteen, the next step is to consider the type of fuel to be used for cooking, whether electricity or gas or both. It may, in some factories, be possible to use some already available steam as well, and, where this is possible, fuel consumption costs can be effectively reduced.

Amongst the items which are basic in a canteen serving 100 main meals is a cooking range, preferably double-fronted complete with a boiling top and a grill. There should also be a steaming oven of about 6 cubic feet capacity; this item will help to relieve the top of the cooking range by being used for steaming root vegetables. A 30-gallon boiling-pan mounted on legs, though not always essential, does reduce the top of the stove work and, if there is any prospect of future development of the canteen, is an essential. There should be a refrigerator of at least 25 cubic feet capacity and a single-pan fish fryer fitted with a hood.

There must be adequate water boiling and storage facilities to meet the tea-service needs; for 100 people, the minimum would according to service be about 6 gallon capacity and an insulated urn of 5 gallon capacity. The tea and cold service counter should be at least 5 feet long, and the hot service counter also about 5 feet long with insets if possible and hot cupboard with sliding doors below. A double sink for washing up and a sink for vegetable preparation are necessary, and a 7 lb. capacity potato peeling machine is recommended. There must be at least one bench for the cook and where possible a wide shelf along one wall at a height convenient for food preparation work.

The cook's store and office fitted with adequate shelving can be combined, a small table, a chair and a telephone being the necessary items. There might well be a cupboard for cleaning materials. The vegetable store need not be large but should have a duckboard to raise sacks from the floor and there should be some slatted-shelving. There should be a cloakroom with wash basin in a convenient position and in the kitchen yard there should be four refuse and swill-bins. It is modern practice to stand the bins raised from the floor and to have a water tap installed in a position convenient for hosing the yard. The

Compact, clean and efficient is this small canteen kitchen by **Benham's.** The equipment is modern and the layout so devised that five staff can work comfortably even though space is restricted.

Minor Items of Equipment for 100 People

Condiment sets	20	*Mincing machines*	1
Cups	200	*Mashers, potato*	1
Plates, meat	150	*Measures*	1
Plates, soup	150	*Openers, can*	1
Plates, sweet	150	*Pails, enamel*	1
Saucers	200	*Pails, mop*	2
		Pails, galvanised	2
Knives	150	*Peelers, potato, hand*	1
Forks	150	*Pins, rolling*	1
Spoons, soup	150	*Portioners, potato*	1
Spoons, sweet	150	*Rings, plate, nesting*	48
Spoons, tea	120	*Scales, 28-lb.*	1
		Sheets, baking	4
Bins, refuse	4	*Sieves, wire*	1
Boards, carving	1	*Slices, fish*	2
Boards, pastry	1	*Spoons, cooks', 12-in.*	3
Bowls, mixing	4	*Spoons, wooden*	2
Boxes for cutlery	2	*Steels, butchers'*	1
Brooms, bass	1	*Strainers, conical*	1
Brooms, hair	1	*Tins, baking*	4
Brushes, lavatory	1	*Tins, roll pudding*	6
Brushes, pastry	1	*Trays, butchers'*	6
Brushes, scouring	1	*Trays, japanned*	2
Brushes, tap	1	*Trays, cake, cooling*	2
Brushes, scrubbing	4	*Tubes and piping bag*	1
Canisters, storage	6	*Whisks, wire*	2
Clocks, kitchen	1		
Collanders, 12-in.	2	*Pans, frying, round, 14-in.*	2
Covers, plate, 8-in.	24	*Pans, boiling, 6-gall.*	1
Cutters, pastry (sets)	1	*Pans, boiling, 3-gall.*	3
Dredgers, flour	1	*Pots, round, 12-pt.*	1
Dustpans	1	*Pots, round, 8-pt.*	2
Forks, carving	1	*Pots, round, 4-pt.*	2
Funnels, pie	6	*Saucepans, double, 6-pt.*	3
Graters	1	*Stockpots, 5-gall.*	1
Holders, toilet roll	1		
Hose, ¾-in.	12'	*Chairs, dining*	100
Jugs, 2-pt.	2	*Tables to seat 4*	25
Jugs, 8-pt.	1	*Trolleys*	1
Kneelers	1		
Knives, cooks' (sets)	1	*Case openers*	1
Knives, carving	1	*Scissors*	1
Knives, palette	1	*Wire cutters*	1
Ladles, 2-oz.	2	*Sack trucks*	1
Ladles, 8-oz.	1	*Cheese wires*	1
Ladles, 5-oz.	2	*Scoops*	1

refrigerator should be installed in the larder which requires shelving along the walls in two tiers. The sinks for washing-up should have draining boards on each side and a plate rack above.

In the dining-room there should, of course, be enough tables and chairs. Trays (and a small table to stand them on) are needed and so is a trolley to collect and return the dirties.

With regard to the minor items of equipment this is largely a matter of individual preference and local circumstances. However, there should always be a surplus of items like cups, saucers, plates and knives and forks. Small items of kitchen equipment can safely be left to the discretion or whim of the head cook. What one cook regards as a must might not appeal to another. The essential thing is to make a complete inventory of all items of equipment however small and to note down additions as they are bought. For the sake of convenience some of the minor items found in a canteen serving 100 people are listed above but the figures are to be taken as a general guide only.

Many times the question is asked as to how many staff are needed to run a canteen. I do not agree with those who claim that a definite answer can be given for all canteens, even though the numbers to be catered for may in many cases be the same. As a guide it may be said that for 100 people there should be one cook, one assistant cook and two to three general assistants.

CANTEEN ADVICE BUREAU

My company consider that the amount of subsidy which they make to the canteen is too high considering the number of meals served. Some reorganisation within the canteen has already been attempted and the prices of meals have been raised but the subsidy figure remains at the same high level. Can you suggest ways of reducing the subsidy necessary or supply detailed information regarding the position in other industrial canteens? (F.K., Shepperton.)

MOST canteens have to be subsidised in order to continue serving meals at a comparatively low figure. The degree of such subsidy varies considerably between different establishments according to the means of the firm and the view taken as to the significance of the canteen from the point of view of welfare. Since the war ended canteen managers, in common with other caterers, have been and still are engaged in a battle with ever-increasing costs. A little cheese-paring here and a little saving there has been made so many times that in many cases there is little else to be done except raise the selling-price of the finished product. Increasing prices brings other problems, not the least being that some custom might be lost while overhead expenses remain nominally the same.

It does not follow that because two canteens serve the same number of meals, and are similarly staffed and equipped, that their expenses will be the same. It is, therefore, of little use to know that one canteen serving 100 meals daily should show a greater working deficit than a similar canteen serving the same number of meals. One must consider the standard and variety of the menus, the quality of the cooking and service, as well as the number to be catered for and the amount spent in wages in catering department. There is, too, the question of hours during which the canteen is in operation, the mode of service and the prices to be charged for meals and snacks and cups of tea.

Control is essential if economy is to go hand in hand with service. It is not sufficient to be adept in buying good quality produce at reasonable prices; one must be able to analyse the accounts and know how much is spent on meat and fish, dairy produce, fruit and vegetables, groceries and provisions, cleaning materials and the like. The pricing of dishes should be done according to a system of ratios of what can be afforded for the place of that dish on the menu, the customer's pocket and the size of portion.

It is suggested that you be kind enough to give further particulars regarding your canteen, the type of service and how you spend your money and how you obtain your revenue. For this purpose a questionnaire is enclosed in order that some idea of your particular circumstances might be obtained. It will be remembered that the services of this Bureau are free and that we should be happy to offer what help we can.

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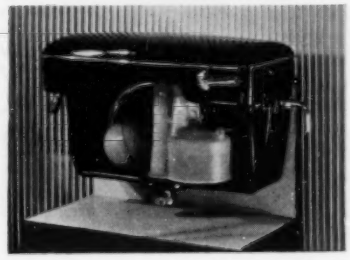
NEW FLUSH SYPHON

OUTDATING all conventional W.C. cistern mechanisms, claim the makers, is this new syphon made from tough flexible plastic. Though similar in appearance to the standard type of syphon flush, the new model is said to be much more efficient.

With the body moulded in one piece to eliminate vulnerable joints, the unit has a large cylinder and throat to allow full water way for an easy start and a large bore to ensure a powerful flush. A brass piston is fitted and the outlet is



fully enclosed to prevent leaks. Another interesting design feature is the provision of a stop to prevent the syphon shifting out of position when the flushpipe is connected.

A special grade of polythene plastic was selected to prevent rusting, corrosion and the formation of verdigris, and the material is unaffected by climatic conditions, acids, alkalis, salt or any type of water.

The model is available in all sizes and bores to suit every type of flat bottom cistern in cast iron, steel, earthenware, vitreous china, fireclay or plastic. **(PM/845.)**

DOUBLE-ACTION DETERGENT

NOW being marketed is an amber coloured liquid, which, when mixed with water, serves a two-fold purpose—both cleansing and sterilising in one operation. Combining a specially developed quaternary ammonium compound with a top-grade detergent to give strong germicidal action, this new product is stated to be easy on the hands and equally effective in hard or soft water. It is designed to remove grease readily without having an adverse effect on metal or plastic ware or cutlery. Available in one- and five-gallon containers, it is claimed that only one eggcupful is required to each gallon of washing up water. **(PM/846.)**

Readers who wish to know the suppliers of any of the products referred to in this section are asked to write to the Editor, quoting the reference number which appears at the end of the paragraph. We are always glad to consider for publication descriptions — preferably accompanied by an illustration suitable for reproduction — of new products.

HANDY DISINFECTANT

NOW on the market is a new lavatory cleaner and disinfectant which is attached to the inside rim of the toilet by a non-scratching and non-rusting metal strap. A "Sanifume" tablet, claim the makers, will clean, disinfect and deodorise the lavatory pan by itself simply through the flushing of the water which brings into action a very powerful germicide. The life of one tablet is about six weeks, and the metal strap is so constructed that it can fit on to almost any shape or size of rim. **(PM/847.)**

Efficiency Aids

FOR TIDY MINDS

THIS 54-drawer storage unit can be used for innumerable commercial and industrial purposes. "Anyone with

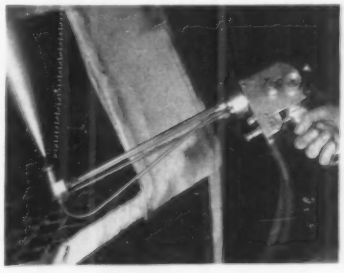
a tidy mind", say the makers, "is liable to need this sort of thing, whatever the trade or profession."

Each drawer measures 5 in. by 3 in. by 11¼ in. and is either perforated and complete with dividing plates, or plain sided. Each is also fitted with handle and card holder, specially made cards being supplied at a small additional charge.

The complete unit is 44 in. high, 36 in. wide and 12 in. from back to front, and is finished in bronze green stove enamel. The whole unit, however, can be varied in height and width to suit specified requirements. **(PM/848.)**

ANGLED NOZZLE

THIS nozzle was made to do a particularly difficult job of metal spraying which had to be done on repetition lines. The job was an aircraft engine



component which had to be sprayed inside and out with aluminium to a certain specification. The makers designed two machines for the treatment of these, on one of which was designed this bent nozzle through which the wire was fed by a variable feed motor. This machine ensured a consistent wire feed and consequently the deposit over the component was exactly to the right thickness. Because of the success of this particular operation and of the angled nozzle, the makers decided there would be a good use for such a nozzle on a hand pistol as illustrated. **(PM/849.)**

BETTER MARKING

THIS new Imprima (Model V) marker incorporates many improved features. An extended feed-tray for easier feeding of labels is fitted and features quick-action, automatic-locking ticket guides; the type-drum is interchangeable, which avoids the need for re-setting of type matter, and is fitted with an extra-large elongated slot giving a wider range of adjustment for all types of tickets. The inking oscillating roller has been made foolproof, say the makers, by the use of locked mechanism, while a new design of cover gives a more streamlined appearance and protects the roller spindle ends from dust and dirt.

All bearings are now "Oilite", requir-

ing no lubrication whatsoever. Other improvements include: a new design setting controls for different thickness of paper, card, etc.; new type drawer with receptacles for type clips; automatic stripper fitted to eliminate entirely the risk of labels being caught up in rollers should the ink be too wet. A built-in counter is also featured. **(PM/850.)**

MANŒUVRABLE WEIGHER

THIS weighing machine is said to be suitable for general industrial use and is available in three sizes: 1 cwt., 2 cwt. and 3 cwt. Because of its light

tubular alloy construction it is easily moved from place to place, and the makers also claim that it is weatherproof and resists many types of chemical corrosion. The knife edges and bearings are of chrome-diffused, high-carbon steel. **(PM/851.)**

PACKING EFFICIENCY

THIS collapsible container, originally developed in Sweden, but now being marketed in Britain also, comprises but three distinct parts: a collapsible "carcase", a top and a pallet base. These are held together by steel strapping thus eliminating the need for nails or screws. When the articles to be packed have been suitably arranged, the

"carcase" is lowered over them. The top is then placed in position and the whole strapped together through grooved battens.

The main advantage of these containers, claim the makers, is that they reduce storage space by as much as 75 per cent, while a full day's supply can be stacked by the packer's bench thereby saving time and labour.

Bandox collapsible containers are available in a variety of standard sizes, from 18 in. by 12 in. by 12 in. (internal dimensions) to 60 in. by 30 in. by 24 in. Other sizes can be supplied to specification, as well as linings, handles and other accessories as desired. **(PM/852.)**

Welfare

ECONOMICAL DISPENSING

THIS new liquid soap dispenser combines economy with efficiency in that the plunger, must be depressed before the soap will flow. In this way

the dispenser cannot possibly be left in the "running" position. It is constructed of anodised hardened aluminium alloy, which is non-corrosive and rustless, and will hold up to three-quarters of a pint. **(PM/853.)**

SIT IN COMFORT

THIS armchair is one of an extensive range of modern furniture for rest rooms, canteens and the like. The tubular frame is of ⅞ in. bright steel tube, rust proofed and finished in polychromatic silver grey stove enamel, and is upholstered in Florestin daffodil hopsack grain covering of contemporary design.

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AIR PURIFIER TABLETS		G-BLOCKS FOR STALLS	
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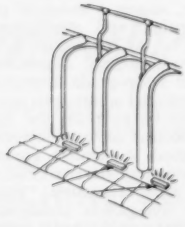

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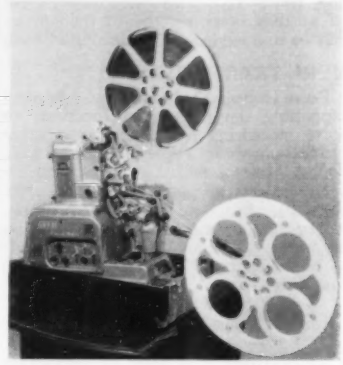
ONE BLOCK IN EACH STALL—THEY NEED NO FURTHER ATTENTION

This material, claim the makers, is flame resistant, scratch proof, and resists the effects of oil, spirits and so forth. It is easily cleaned and suitable for use in all climatic conditions. **(PM/854.)**

REMOTE CONTROL PROJECTOR

CLAIMED to be an ideal medium for film instruction in industry, this 16 mm. optical magnetic recording projector operates on the new high fidelity magnetic tape recording principle. Sound tracks can now be simply and economically added on any type of 16 mm. film. The makers state that in using this equipment, commentaries, music or other effects may be recorded separately or simultaneously and projected immediately. The addition of sound tracks to existing optical sound films does not, it is stated, affect the fidelity of the optical track. A separate remote control unit enables recording to be carried out in a room far removed from the projector, thus ensuring that no extraneous



noise appears on the sound track. Overloading is avoided by use of a clearly marked sensitive programme meter. **(PM/855.)**

Safety

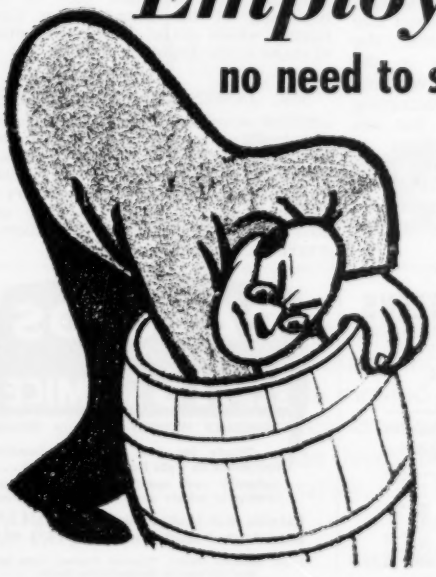
TRAFFIC CAUTION

THIS new electrically-operated works traffic barrier was designed as a protection for pedestrian traffic into the main works roadway. All vehicles must

halt at the barrier which can only be raised when the pedestrian barrier is lowered, and, vice-versa, pedestrian traffic from the clocking hall can only proceed when the traffic barrier is lowered.

The structure is clamped to the post by means of blocks lined with friction material. The barrier itself is a 3-in. diameter tube in light alloy which is clamped to the main trunnion fitting and counter-weighted. The trunnion is supported on the main frame by means of standard self-aligning ball bearings. The main frame and mechanism are

(Continued overleaf)



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NEW INDUSTRIAL EQUIPMENT (*Continued*)

housed in a sheet steel cover which is easily removed for adjustment and maintenance of the mechanism. All structural parts are suitably treated for corrosion prevention; the unit is finished with a white mechanism housing and black and white stripes for the barrier. Stop discs outlined with red reflectors may be fitted if desired.

Control is by means of a simple three-position switch. In the mid-switch position, power supply to the barrier is cut off so that in an emergency the barrier may be stopped in any position. **(PM/856.)**

NEW TRADE LISTS

Dawe Instruments In Industry. Booklet explaining the range and functions of noise measuring instruments and other products made by *Dawe Instruments Ltd., Ealing, London, W.5.*

Laboratory Furniture (Catalogue No. 16B-LF). Brochure featuring furniture for the modern laboratory and also fittings for water, gas, fume disposal, etc., made by *Griffin & Tatlock Ltd., Kemble Street, Kingsway, London, W.C.2.*

The Industrial Psychologist

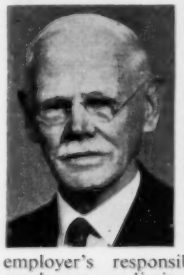
(*Continued from page* 239)

a supervisor—is at least as important these days as the possession of physical skill. A supervisor of a small group who can inspire confidence and respect in the men working under him—and that applies to the female worker as well—will achieve a better production record than the skilled, efficient but disliked leader.

There are scores of other problems where the industrial psychologist can help. There is, for instance, the problem of human factors in the design of machinery and working methods, there is the ever-occurring question of incentives, last but not least, there are the problems of occupational adjustment. Who else could tackle them successfully and scientifically than a psychologist who has made the study of the human mind his life's vocation ?

OBITUARY

MR. B. SEEBOHM ROWNTREE, of *Rowntree and Co., Ltd.*, died at his High Wycombe home on Thursday, October 7, aged 83. Entering into partnership in the firm in 1892, Mr. Rowntree worked fervently for the introduction of schemes for the improvement of the conditions of life of working men and women. His greatest contribution to the business was in developing the labour policy previously initiated by his father—the late Joseph Rowntree. The reasons for this policy are propounded in his book, "The Human Factor in Business", which, published in 1921, countered the attitude generally adopted that the employer's responsibility towards his employees was limited to the payment of the agreed wages. Mr. Rowntree was convinced that the workers' demand for a higher standard of life should be met by industry, but he was also aware that this demand could only be met by increasing the wealth produced. It was this consciousness which led him to undertake pioneer work in promoting schemes for raising the level of efficiency in British industry. No doubt this led to his appointment in 1916 by Lloyd George as Director of Welfare in the Ministry of Munitions. In 1926, he was largely instrumental in bringing the miners and mine-owners together to end the disastrous coal strike. And in the following year he took part in the beginning of the Mond-Turner Conference which aimed at the prevention of major trade disputes.



MR. JAMES EDGAR MOULTON, assistant secretary of *Hoover Limited*, on October 3, at the age of 42. Mr. Moulton joined the company in 1937 and was promoted to assistant secretary in 1946. He was also for many years secretary of the company's suggestion scheme and took a large part in the administration of pension schemes.

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Summary of Official Publications

READERS' GUIDE TO ACTS, STATUTORY ORDERS, NEW RULINGS AND AWARDS CONCERNING INDUSTRY AND PERSONNEL

STATUTORY INSTRUMENTS

No. 1154. The Fire Services (Conditions of Service) (Scotland) No. 2 Regulations, 1954. Dated September 1, 1954. *H.M.S.O.* 1s. (Consolidate, with amendments, Regulations set out in the Seventh Schedule and revoked by Regulation 12. Part I of the Third Schedule provides for reimbursement of certain National Health Service charges; the Fourth Schedule makes further provision for the payment of allowances to whole-time members of a brigade; and paragraph 13 of the Fifth Schedule provides for the making of payments to part-time members of a brigade in respect of attendance for civil defence training.) Operative from September 13, 1954.

No. 1155. The Sack and Bag Wages Council (Great Britain) Wages Regulation (Amendment) Order, 1954. Dated September 2, 1954, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945 (*a*). *H.M.S.O.* 3d. (Amends Order S.B. 39 by increasing the statutory minimum remuneration fixed by that Order.) Operative from September 17, 1954.

No. 1158. The Fire Services (Conditions of Service) Regulations, 1954. Dated September 1, 1954, *H.M.S.O.* 1s. (Consolidate, with amendments, the Fire Services (Ranks and Conditions of Service) Regulations set out in the Seventh Schedule which were revoked by Regulation 12. Part I of the Third Schedule provides for the reimbursement of certain National Health Service charges; the Fourth Schedule makes further provision for the payment of allowances to whole-time members of a brigade; paragraph 13 of the Fifth Schedule provides for the making of payments to part-time members of a brigade in respect of attendance for civil defence training.) Operative from September 13, 1954.

No. 1198. The Coal Industry Nationalisation (Legal Proceedings) Regulations, 1954. Dated September 10, 1954, made by the Minister of Fuel and Power under Section 16 of the Coal Industry Nationalisation Act, 1946 (*a*). *H.M.S.O.* 2d. (Provides that no legal proceedings shall be taken in relation to the inclusion of a transferred interest in some compensation unit, or as to the allocation of a compensation unit to a valuation district, unless the proceedings are commenced before a date prescribed for the purpose of preventing delay in the final ascertainment of the values of units having a coal industry value.) Operative from September 18, 1954.

No. 1202. The Retail Bespoke Tailoring Wages Council (Scotland) Wages Regulation Order, 1954. Dated September 13, 1954, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945 (*a*). *H.M.S.O.* 6d. (Sets out the statutory minimum remuneration payable in substitution for that fixed by Orders R.B.S. 31 and 37 which are revoked.) Operative from September 29, 1954.

No. 1207. The National Insurance (Modification of Local Government Superannuation Schemes) (Amendment) Regulations, 1954. Dated September 14, 1954, made by the Minister of Housing and Local Government under Subsection 4, Section 69 of the National Insurance Act, 1946 (*a*). *H.M.S.O.* 3d. (Contain provisions for the modification of benefits under those regulations, and schemes made in relation to local Acts will in due course do the same in relation to benefits under such Acts.) Operative from October 1, 1954.

INDUSTRIAL DISPUTES TRIBUNAL

AWARDS

No. 591. Rates of Wages of Workers in the Fletton Brick Industry. Claim: For an increase of 2½d. per hour on time rates, and an equivalent increase for pieceworkers, with percentage increases for women and juveniles. **Award:** Time rates of wages for adult male timeworkers increased by 1½d. per hour, with proportionate increases for women and juveniles; pieceworkers shall receive an increase equivalent to that for timeworkers either as a flat rate payment or by the adjustment of piecework prices. (25/8/54.)

No. 592. Observance by Hereford Corporation of Recognised Terms and Conditions of Employment in Respect of a Named Officer. Claim: Whether the Hereford Corporation should observe certain specified terms and conditions of employment. **Award:** It is found that the recognised terms and conditions of employment applicable are those set out in the Scheme of Conditions of Service formulated by the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services and that the decision of the Disputes Committee of the West Midlands Provincial Council, dated December 18, 1953, that the grading of the post designated as Junior Engineering Assistant in the Surveyor's department of the Corporation should be A.P.T. I with effect as from April 1, 1953, forms part of the recognised terms and conditions of employment. (30/8/54.)

No. 593. Remuneration of a Certain Chief Officer of the Corporation of the City, County and County Borough of Bristol. Claim: That the Corporation in implementing the recommendations of the Joint Negotiating Committee for Chief Officers of Local Authorities should have fixed the salary of the Chief Education Officer on a scale of £2,700-£3,000 or other appropriate scale within the salary range for a population of 400/600,000. **Award:** That the salary scale applicable in this case shall be £2,250-£2,550 per annum. (31/8/54.)

No. 594. Remuneration of a Certain Chief Officer of the Corporation of the City, County and County Borough of Bristol. Claim: For the fixing of the salary of the City Treasurer on a scale of £2,700-£3,000 per annum or other appropriate scale within the salary range for a population of 400/600,000. **Award:** That the salary scale applicable in this case shall be £2,400-£2,700 per annum. (31/8/54.)

No. 595. Remuneration of Certain Officers Employed by the Metropolitan Water Board. Claim: For an increase in remuneration. **Award:** Salary scales shall apply to the various grades as follows: E, £377-£560 per annum; D, £580-£650 per annum; C 1 and 2, £680-£790 per annum; B 1 and 2, £820-£940 per annum; A 1 and 2, £970-£1,200 per annum; Special III, £1,260-£1,430 per annum; Special II, £1,480-£1,650 per annum; and Special I, £1,710-£1,870 per annum. (31/8/54.)

No. 596. Remuneration of Patternmakers Employed in the Engineering Industry. Claim: For an increase of 10s. in the existing differential rate for Patternmakers. **Award:** That the differential rate at present in operation shall be increased by 4s. per week. (3/9/54.)

No. 597. Rates of Wages and Hours of Work in the Window Blind Manufacturing Trade. Claim: For an increase in existing rates and for a reduction in the hours of the normal working week. **Award:** That (1) the normal working week shall be 44 hours; and (2) the rates of wages of all adult male workers shall be increased by 1d. per hour, with proportionate increases for women and for apprentices and learners. (7/9/54.)

No. 598. Rates of Wages of Domestic and Similar Grades of Staff Employed in Hospitals Throughout Great Britain. Claim: For a substantial increase in the existing rates of pay. **Award:** That the rates of wages of the workers concerned shall be increased by 6s. per week for men and 4s. 6d. for women. The Tribunal recommend that the application of this award shall be suspended pending a settlement of the question of board and lodging and meal charges, retrospective payment being made when this question has been settled. (7/9/54.)

No. 599. Rates of Wages of Certain Workers Employed by the Imperial Tobacco Company at their Ogden Branch, Liverpool. Claim: For a rate of 162s. 2d. per week for cutter-stovers. **Award:** Claim not established. (9/9/54.)

No. 600. Rates of Wages of Certain Workers Employed by Funeral Directors in the Mersey District. Claim: For certain increased rates for drivers and coffin makers. **Award:** That the rate of wages of drivers shall be increased to 125s. per week and of coffin makers to 140s. per week, to be effective as from the beginning of the first full pay period following May 17, 1954. (13/9/54.)

No. 601. Salary Scales of Clerical Staff Employed by a Provident Society in London. Claim: For improved salary scales for male and female clerical staffs. **Award:** That (1) the bonuses at present in operation shall be incorporated in the salary scales and made superannuable; and (2) the salaries of principal clerks shall be increased by £26 per annum and of senior clerks by £15 per annum, these increases to be superannuable. (14/9/54.)

No. 602. Rates of Wages in the Cornish and Devon Granite Industry. Claim: For an increase of 1½d. per hour in basic wages. **Award:** Claim established. (20/9/54.)

No. 603. Remuneration of a Certain Chief Officer of the Corporation of the City, County and County Borough of Bristol. Claim: For the fixing of the salary of the Housing Manager on a scale of £2,100-£2,400 per annum or other appropriate scale. **Award:** Claim not established. (21/9/54.)

No. 604. Remuneration of a Certain Chief Officer of the Corporation of the City, County and County Borough of Bristol. Claim: For the fixing of the salary of the City Cleansing and Transport Officer on a scale of £1,750-£2,000 per annum or other appropriate scale. **Award:** Claim not established. (21/9/54.)

No. 605. Remuneration of Certain Male Staff of the East Anglian Trustee Savings Bank. Claim: For a specified salary scale for male clerks as a basic minimum rate. **Award:** That the basic minimum salary scale applicable to the male staff concerned shall be in the range of £160 per annum at the age of 17, with one year's service, to £550 per annum at 31, with 15 years' service. This minimum scale should not prejudice the right of any worker whose existing salary is in excess of that herein provided to continue to receive such higher salary. The Award is effective as from May 21, 1954. (21/9/54.)

No. 606. Rates of Wages of Certain Workers Employed in the Baking Trade in the North of England. Claim: For rates of wages higher than the minimum rates fixed by the Baking Wages Council. **Award:** Claim not established. (23/9/54.)

No. 607. Rates of Wages of Workers in the Home Grown Timber Trade. Claim: For an increase of 3d. per hour on the existing minimum wage

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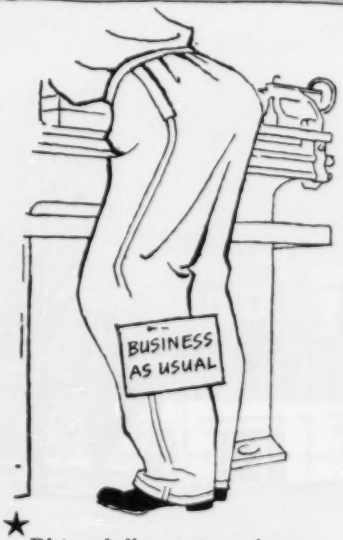

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THE ANTISEPTIC SELF-ADHESIVE BANDAGE

* *sticks to itself, but NOT to the skin!*

rates. **Award**: That the minimum rates of wages of the workers concerned shall be increased by 1d. per hour for men and by proportionate amounts for youths and boys. (24/9/54.)

INDUSTRIAL COURT AWARDS

No. 2527. Civil Air Transport. Reference: To determine an application by B.O.A.C. Pilots of aircraft carrying livestock freight for an additional payment of £1 per flying hour, over and above the emoluments specified in an Agreement dated February, 21, 1950. **Award**: That Claimants shall receive an additional payment of 7s. per flying hour over and above the emoluments specified. (14/9/54.)

No. 2528. Government Industrial Establishments. Reference: That any payment for time worked on a holiday, as distinct from holiday pay, shall be disregarded for the purposes of the guaranteed week. **Award**: Claim not established. (20/9/54.)

GENERAL

Civil Service Arbitration Tribunal Award No. 260. Claim: That with effect from January 1, 1953, the condition hours of Superintendent Traffic Handlers, Traffic Handlers (Supervisory) and Traffic Handlers, established and unestablished, shall be 42 gross (London) and 44 gross (Provinces) per week. **Award**: That the conditioned hours of those concerned shall be 44 net per week. (30/7/54.)

Civil Service Arbitration Tribunal Award No. 261. Claim: That award No. 86 be revised and the number of temporary pensionable allowances (at present £110 for men) payable to certain Inspectors of Taxes (Grade III) shall be increased to 500. **Award**: Claim not established. (31/7/54.)

Civil Service Arbitration Tribunal Award No. 262. Claim: That the investigating staff of the three Royal Commissions on Ancient and Historical Monuments shall receive increased salary scales. **Award**: That (*a*) the scales (London, male) for the staff concerned shall be : Investigators, £470—£855; Senior Investigators, £915—£1,250; Principal Investigators, £975—£1,430; (*b*) Principal Investigators in post shall be allowed incremental progression on the old scale up to £1,200 per annum after which point they will proceed on the next incremental date to £1,230 per annum on the new scale. (25/9/54.)

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25 Meeting of the Industrial Editors (Welfare) Group.
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16 **Belfast.** Foremanship Course.
17 **Dublin.** Canteen Course.
18 **Dublin.** Foremanship Course.
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24 **Leeds.** Canteen Course.
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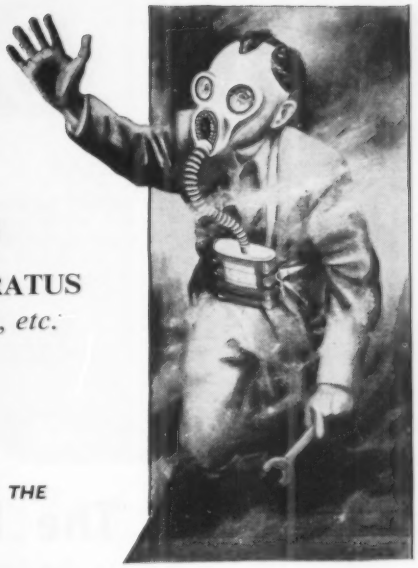

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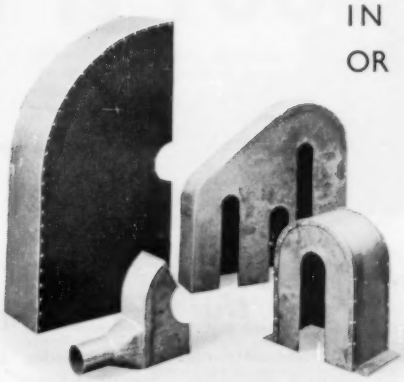

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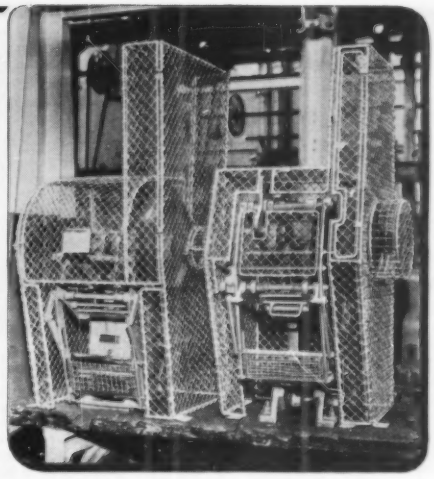

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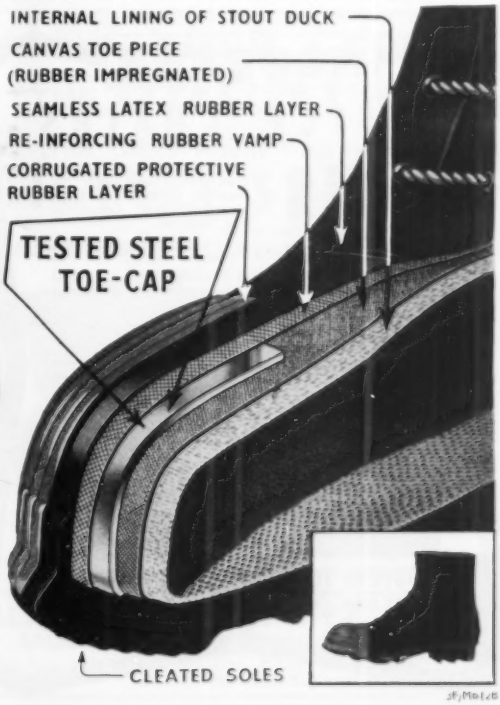

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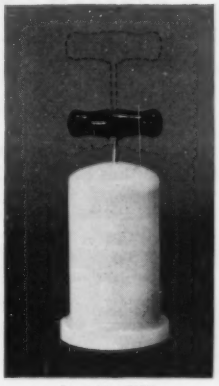

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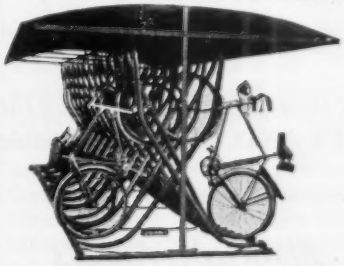

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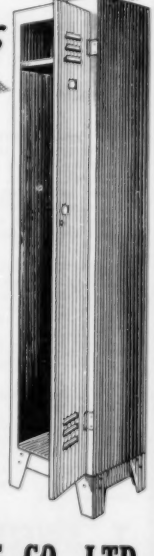

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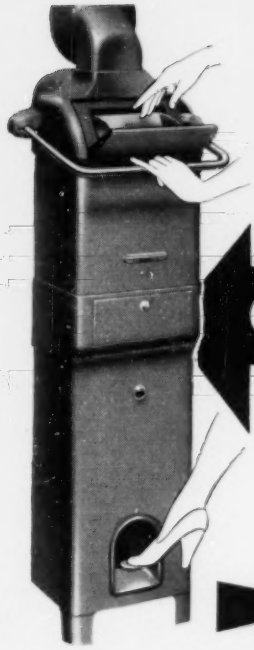

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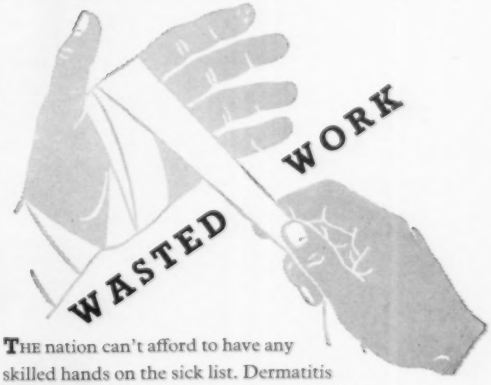

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